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YESTERDAY AND TODAY IN MEDICINE.*

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Approaching an age in medical life in which I am privileged to look back over the years that have gone, I stand now with cherished thoughts of the romance of medicine of yesterday and with proud recognition of the achievement of medical science of today.

In contemplation of the future, I feel the thrill which should be felt in the heart of every young medical man as he begins his career, trained as a scientist by modern educational methods, and inspired as an idealist by the noble example and precept of those whose memory we delight to honor.

More than thirty years ago, when I began the practice of medicine, the leaders of our profession in Mississippi were not specialists or research laboratory workers, but general practitioners—clinicians of culture as well as of learning. They accomplished much with simple equipment, and arrived at their diagnosis without the aid of laboratory refinements, and made their visits without the dispatch and comfort of motor cars traveling over hard surfaced roads. Without instruments of precision they developed ingenuity and resourcefulness, and without intense scientific training they displayed a compensatory clinical acumen akin to a sixth sense, or *tactus eruditus*. They knew their patients through personal contact and association, and they studied the experiments which nature made upon the sick and the suffering. Through long hours of patient watchfulness and attendance, they studied the natural phenomena of disease, and learned to assess correctly the value of symptoms. Their reputations were rather local, but they stood high in the profession of this State, and were held in the highest esteem by the people of their communities. Their contributions were more to the alleviation of suffering through their daily work than to the store of scientific knowledge.

Such pioneers as Ward of Winona, Isom of Oxford, Taylor of Corinth, Minor of Macon, Vaughan of Meridian, Jones and Bennett of Brookhaven, Wert Johnson of Jackson, Quinn of Vicksburg, Dunn of Greenville, Young and Sharp of Grenada, and many others exhibited a rare combination of brain and heart which molds character, and left to this society a rich heritage. They were the Sydenhams and McKenzies of Mississippi Medicine.

A change, however, has been wrought by the improvement in medical education and the facilities for post-graduate study, and what phenomenal results have followed the discoveries of experimental investigation.

Our young medical men are being more thoroughly and scientifically trained than in the earlier days when they were given

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two years of lecture courses, but it seems to me that they fail to grasp and to hold as their own, the mass of scientific facts which is crowded into the curriculum. In other words, I doubt if their retentive powers are as good as those of the older men. As prophesied by Osler, some of our recent graduates tend to exhibit a kind of medical Chauvinism; that is to regard lightly the thoughts and work eminating from any but their own alma mater, their devotion to which seems to prejudice them against the work of other, perhaps, less recognized institutions. By raising the standard of medical colleges, and constantly changing the methods of instruction, medical education has been greatly improved, but its problems are still unsolved. The value of post-graduate study is well illustrated by the benefits which some of the men derived from their instruction and experience during the World War, and everywhere opportunities for post-graduate study are increasing and are available to all.

As a corollary to the education of our students and ourselves there is the problem of education of the public in matters of health, so that they shall learn to recognize men of training and ability and not be misled by those who have only the qualities of plausibility and persuasiveness. In the campaign for periodic health examinations, and in the dissemination of information about cancer and tuberculosis, we are trying to stress the importance of early recognition of disease. In order that the profession may not be found wanting in its knowledge, we must learn more of the early indications of disease processes, for after all many of our clinical symptoms of disease are in reality very late manifestations. For instance in the older text books, the diagnostic symptoms of carcinoma of the breast were pain, enlargement of the axilliary glands and a lump in the breast, with discharge and ulceration. As some one has aptly expressed it, "these are not signs of cancer of the breast, but the symptoms of death."'

With the introduction and increasing use of mechanical means of examination, much that was hitherto obscure, is now made accessible, and our clinical interpretation of symptoms and signs find added weight in the visualization of actual structural change, or the expression of functional incapacity of an organ. Through the use of opaque photographic media, the roentologist now shows us the contour of the gallbladder and the urinary bladder, the outline of the kidney, pelvis and calyces, the structural integrity of the duodenal bulb, the size, shape and general outline of the maxillary sinuses, the distribution of the bronchial tree, the outline of the uterus and tubes, and even the ventricles of the brain may be photographed. One may well speculate on the future diagnostic possibility of the roentgen-ray in medicine.

Hitherto used only in larger hospitals and laboratories devoted to experimental study, the electrocardiograph is now rapidly coming into general use, and we daily interpret the written record of the irregularities of the heart beat and with accuracy and certainty locate disturbances in the conducting bundle of His.

The metabolimeter expressing the rate of metabolic activity has proven of unquestionable value in detecting the disturbances of the thyroid gland. No longer is the diagnosis of myxedema confined to those well defined cases manifesting dry skin, course hair, heavy features, brittle finger nails and rapidly increasing weight, but we have come to recognize the early case of hypothyroidism, and have learned to combat the disease in its earliest manifestations.

Along with this development of mechanical aids in medicine has gone the brilliant study and progress of biochemistry and physiology. The suspected nephritic is investigated by an estimation of the func-

tional capacity of the kidneys, by the determination of the degree of nitrogenous retention in the blood, the variation in specific gravity of several specimens of urine, and the ability of the kidneys to excrete a selected dye.

Disturbance of the acid-alkali equilibrium of the blood are now detected through studies of blood chemistry, and from this knowledge has come an interpretation of previously little understood symptoms, and the development of methods for combating and preventing such imbalances as alkalosis and acidosis. The estimation of the chloride content of the blood is of particular value in establishing the presence or absence of alkalosis, and the carbon dioxide combining power of the blood plasma is an index of the degree of acidosis.

Recently much interest has been displayed in calcium metabolism and the influence of the parathyroid glands on the complete metabolic activity of calcium has been definitely established. The occurrence of tetany no longer presents a problem and through knowledge acquired, we have means of combating this disturbance of the physiology of the organism. Tetany following thyroidectomy is easily recognized and immediately controlled by such specific therapy, as parathyroid extract and calcium.

The comparatively recent isolation of the hormone insulin, which in some manner controls the metabolism of carbohydrates, thereby influencing the metabolic activity of fats, was perhaps the most outstanding medical achievement of the century. The period of expectancy of the adult diabetic has been greatly increased, and the juvenile diabetic no longer drifts into malignant acidosis and coma. His growth and development progress normally over a period of years, and who knows but what he may be carried into productive manhood and citizenship by means of this extract from one of the glands of internal secretion? As a consequence of the use of this remarkable agent, we no longer fear the results of major surgical procedures in those individuals, manifesting the clinical syndrome of glycosuria, hyperglycemia and acidosis.

We are learning more of chemical, biologic, and physiologic pathology instead of contenting ourselves with the knowledge of structural changes. We are not satisfied to know that a patient has a heart murmur, but we must try to determine the functional capacity of this organ. For after all symptoms are manifestations of disturbed function, and not of structural changes, and many of our newer methods of investigation are attempts to estimate the functional capacity of various organs. For instance, the method of cholecystography, originated by Graham, is an attempt to demonstrate the ability of the gall-bladder to concentrate and to empty, which are its only established functions.

With renewed interest and remarkable originality of thought, the best minds of today are centered upon the physiological interpretation of the function of the liver, which is unquestionably the biochemical laboratory of the human body. Is it too much to prophesy that from these studies hitherto unexplained physiopathological reactions will not only be correctly interpreted, but means and measures for their prevention and cure will be provided? Crile says "Life depends upon the liver."

More and more we are learning to recognize the expression of the sympathetic autonomic nervous system in the production of symptoms. Long overlooked, its influence on visceral activity is beginning to be recognized, and with an increasing knowledge of physiology we are learning to appreciate how disturbances of the sympathetic nervous system can materially influence the viscera in hastening and maintaining their evident departures from normal. Such operations as periarterial sympathectomy, denervation of the stomach, and cervical sympathectomy are impres-

sive examples of the efforts of surgeons to treat disease manifestations by correcting hyperphysiological activity of the nerves supplying a viscera.

Another advancement in the treatment of disease is in limiting our use of remedies to those natural agents: diet, sunshine, fresh air, and rest, and to those few well tried drugs whose pharmacological value has been thoroughly established. But we must be cautious lest the avalanche of pseudo-scientific literature which covers our desks leads us back to the use of a score or more of remedies for every symptom.

Many diseases are fairly well treated in the individual without having as yet discovered their etiology. Pernicious anemia seems to be greatly improved by feeding whole liver and liver fraction. However, the problem of preventive treatment of these diseases is inadequately met until their causes are established. When etiological agents are discovered the medical profession is quick to turn this knowledge into the path of prevention. We have stamped out smallpox, yellow fever, bubonic plague, and epidemics of scarlet fever and typhoid fever are becoming less severe. Witness the control of malaria and typhoid fever in your own dear State.

Perhaps no other disease has received as much scientific investigation as cancer, yet despite the ceaseless co-operative efforts of the laboratory worker, the clinician and the surgeon, the cause of cancer still remains hidden in apparently hopeless obscurity. In our eternal hope we have investigated the cures employed by quacks, and have accepted with enthusiasm the scientific suggestions of research workers, only to find in the end disappointment and failure. For the cancer patient we use surgery, radium and roentgen-ray, but for the control of cancer we are dependent upon educating the public to the importance of early treatment, and to the recognition of precancerous lesions.

The ever widening field of medicine of today has developed the specialist, a man who, by limiting his scope of activity, is able to acquire more accurate and extensive knowledge in his particular branch of the science. There are those who claim to be specialists who have no more diagnostic skill nor successful methods of treatment than the old family doctor. Other specialists become mere technicians, having lost sight of disease as it effects the entire organism and find explanation of every symptom in the disturbance of the organs they treat. McGuire says: "His patients often suffer from special attention and general neglect. Motes are pulled out of the eyes and beans are left in the belly, or the abdomen is invaded for real or supposed appendicitis and the lungs are left to fight their own battle with tuberculosis."

To offset the disadvantages of specialization, there is the system of group medicine, a kind of medical teamwork which functions as the surgical team does in the operating amphitheatre. But above all, we need today, as we have always needed, the competent general practitioner, for he is the backbone of medicine, and the standard by which our progress is measured.

And he it is I would applaud—this gallant crusader; this tireless minister to the poor; this fearless counsellor of the rich; this faithful friend to the unfortunate; this zealous and undaunted seeker after truth.

It is the glow of his steadfast, if sometimes feeble torch, that has lighted the incandescent way to thrilling discoveries in the laboratories of today. It is the sturdy tread of his untiring footsteps that echoes down the corridors of science. It is from his hand that the young doctor of todoy will receive the scroll as did the runners in the ancient days. It is from his lips they will hear the words of courage: "Go on—Go on; my body is weary, but my spirit travels with you."

THE YOUNG PHYSICIAN.*

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NEW ORLEANS.

All valedictory and baccalaureate remarks have certain handicaps to overcome, and the Ivy Day address is in even worse case than any of the others. Besides being delivered on a particularly hot morning in June, it is always made by a member of the Medical Faculty, from the voices of whom, after years of dutiful listening, the graduates might expect at this time to have surcease. I feel for you, gentlemen, and I shall show my sympathy in a practical way by being as brief as I can.

The traditional observation that commencement is truly the beginning of active life is not quite exact in regard to the medical graduate. Most of you—I wish it could be all of you—will serve one or more interne years, and during them, I venture to predict, you will learn more of your profession than you have learned in all your college classes. It is not the rule here, as it is in certain other schools, that the medical degree is withheld until a year's interneship has been completed, and I am not sure that this is the wisest way to accomplish the result, but certainly the principle is absolutely correct, that no man is fitted to practice medicine independently until he has practiced it on actual patients and under strict supervision.

The great weakness of medical education today is, as you know, that the contact with patients during the undergraduate years is extremely brief. The laboratory or pure sciences are in the saddle, and, as more than one voice of authority has proclaimed, we are in danger of forgetting that the function of the medical school is, after all, to train physicians to minister to the sick. More and more in the last quarter of a century has the clinical aspect of medicine been slighted in medical education. The heads of departments in the foremost schools of the country are no longer active clinicians. They are full-time men, well trained, able, scholarly, I grant you, but nevertheless men whose point of view is warped by the fact that they have no real contact with patients, that their activities are largely or entirely confined to the classroom and to the laboratory. I do not propose on an already warm morning to enter upon the vexed discussion of laboratory versus clinical medicine, which would make us all much warmer than we are now. But I would point out that most of the verbiage could be eliminated from the argument if common sense were permitted to rule the situation, if it were realized that the one aspect of medicine is the complement of the other, and that neither the clinician nor the laboratory worker can live to himself alone. The practising physician is bound to the research physician by a thousand indissoluble ties, and, as Cushing aptly says, it could not possibly harm a teacher of the preclinical sciences to have served a house-officership, nor could it dampen his investigative ardor to spend an occasional hour or two in contact with patients in the wards or the clinics.

Whether the old system of medical education, which put most of the emphasis on the clinical side, produced better physicians than the present system, in which the emphasis is reversed, is the acid test of the problem, and you of this medical generation will write the answer in your own achievements. Personally, I was educated under the old system and I have always regretted that my laboratory training was so slight. But I fear that we are going too far in the other direction, and I know that Graves is right when he says that the modern medical graduate has had little training in practical therapeutics and none at all in the humanities of medicine. And because this is so, I know that an interne year, a practical apprenticeship, as it were, is infinitely more necessary and more desirable now than it was twenty-five years ago.

*Ivy Day address, Tulane University School of Medicine, June 12, 1928.

After the interne year, what? Well, another over-worked tendency in medicine today is too early specialization. Some degree of specialization, of course, is inevitable, for the march of medical events has been too rapid to permit the individual physician any longer to be all things to all patients. But let me remind you that all successful specialism is built upon the foundation of general practice. You cannot treat special diseases until you realize their relation to general diseases, until, as Chesterton puts it, you see "the broad daylight of proportion which is the principle of all reality".

And if you prefer general practice, if you have no leaning toward any of the specialties, by all means remain in general practice. We need more general practitioners today, as a long-suffering and loudly-complaining public will testify. There is no stigma of disgrace, no hint of contumely, attached to these men of fine devotion and consecration whose feet are set, if you will, in the middle ways. The profession of medicine needs few things more than a recrudescence of the old-fashioned family physician.

But if you do decide to specialize, you must realize at the outset that something more is needed than the mere decision to do so. Special practice implies special training. I take surgery as my illustration because it has a constant lure for the young graduate, but what I have to say is applicable to any branch of medicine. Whether the day will ever come when there will be more restrictions on the practice of surgery than there are at present, I cannot say, but I greatly fear that unless we clean our own house, other duly constituted authorities will clean it for us. No other branch of medicine is fuller of self-appointed specialists, no other branch actually requires a more thorough preparation. "A man," says DaCosta, "who tries to start out as a surgical specialist never learns the rudiments of surgery throughout all his days," and W. J. Mayo is not unduly harsh when he says that "young men without special training are not to be encouraged in wanton assaults on major surgical diseases unless justified by necessity," a necessity, I might add, which seldom exists in these days of easy transportation and many hospitals.

Manual dexterity is the smallest part of the surgeon's kit. Far more does he need surgical judgment and a surgical conscience and that most prosaic thing, a knowledge of surgical anatomy. Moynihan, you will remember, stresses the importance of learning pathology on the living subject, but you will note that he does not include anatomy in the lesson. Do not, I beg of you, attempt to learn anatomy in the operating room and on your patients. The place to learn it, the only place to learn it, is in the dissecting room and on the cadaver. DaCosta says that when it comes to surgery some people do not know enough to be afraid; that knowledge, I fear, comes only with the years, but at least, if you determine to be a surgeon, write it on your heart that the best surgeon is often the man who does the smallest amount of surgery, and that under certain circumstances, at least, time may be the best surgeon of us all.

No matter what branch of medicine you elect to follow, you must be students until the end of your days. Medicine does not stand still and of the making of its books there is no end. If you have not already cultivated the habit of study—and it is astonishing how many college graduates have not—then use your spare time—of which, alas, you will have much in the first years of your practice—to form the habit. If you are so exceptional and so fortunate as to be busy at once, then make the time. But read regularly, make systematic study an integral part of your life, lose no opportunity of observing the work of others, attend medical meetings, visit hospitals and clinics, finally, when you have something to say, do not hesitate to say it or to write it yourself. "The man," says Francis Bacon, "that is young in years may be old

in hours if he have lost no time." Turn the lean years to account by cultivating the habits of the student, by keeping abreast of the medical times, and you will find yourself repaid a hundred fold and more.

Why you have decided to be physicians I do not know, and I greatly doubt whether many of you know either. There are some among you, I am sure, who have really had a vocation, who, as wise old Stephen Paget says, "were called to be doctors before (you) were called to be babies," but most of you, I am sure, are where you are for more accidental reasons. Some of you, I question not, have erred in your choice, are realizing, even now, that you are not where you would be, that your love lies elsewhere. If this is so, if you can honorably retire, do so before it is too late. But most of you will not be so situated as to be able to throw away these years of preparation, and you must lie upon the bed you have made. Remember, in that case, that in many lives—I had almost said in most lives—duty faithfully done may well take the place of inspiration, and that the grace of courage, in the phrase of the beloved and gallant R. L. S., is a staff which each of us may cut for our own journey.

Even those of you have turned to medicine from sheer love, who follow it with the devotion St. Francis lavished on his dear Lady Poverty, have chosen a life of arduous toil, a life that in its very essence will never be an easy one. Whether you will it so or not, from this time forward your life belongs largely to others. You are dealing in human lives, you are set above other men in that, as far as mortals may, you hold the issues of life and death in your hands. You will know anxious days and wakeful nights, you will know self-reproach and many misgivings and much soul-searching and heart-breaking care. You cannot be faithful to your profession and avoid these things. You will know what it is to give without stint of your time, of your knowledge, of your skill, of your very self, and sometimes to give it all in vain. You have chosen a profession, not a trade, a profession whose only reason for being is to succor mankind, to add to the sum of health and happiness on earth, not to exploit human beings for personal gain. Your reward will be in kind quite as often as in coin of the realm, but no matter what it is, no matter if it does not come at all, the medical profession, like the priesthood from which it springs, must not be commercialized. "The world must return to the word duty and be done with the word reward."

Stevenson, in one of his letters, says that he went to church and the clergyman did his best to make him hate him. I am afraid I am in the situation of that clergyman. I have certainly preached to you, and in these unregenerate days it is highly unfashionable to preach and equally unfashionable to listen, as you, perforce, have been obliged to do. I realize that I have said nothing to you which you do not already know. I have merely tried to remind you again of a side of the medical profession which in the busy round of college and in the practical atmosphere of these modern days you are all too likely to forget. You are as much bound by the old Oath of Hippocrates as if, as is still the custom in some medical schools, you had actually subscribed to it, and you will learn, as the years go by, that "only in accomplishing this oath and not confounding it" may you expect to have "enjoyment of life and art" and "good repute among all men for ever and ever."

Spirochetal Jaundice.—In the eighth proved case of Leptospira icterohemorrhagiae reported in the United States, the symptoms, including the usual relapse, were characteristic of this disease. The mode of infection could not be determined. Mulholland and Bray state that jaundice with high fever, prostration, muscular pains, nosebleed or hemorrhage with lymphocytosis and many large lymphocytes should make one suspect Weil's disease. The diagnosis can be made in the early stages by inoculating a guinea-pig with the patient's blood. The authors agree with numerous other writers that mild jaundice, as seen in epidemics, particularly prevalent in institutions, is probably not of this type, for injections of blood into the guinea-pig from a number of such cases gave entirely negative results. J.A.M.A., 90:1113, 1928.

THE CONTROL OF TUBERCULOSIS IN INFANTS AND CHILDREN*

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There are many factors which will necessarily enter into any program of prevention of tuberculosis in infants and children. Tuberculosis is defined by practically all the authorities as the condition resulting from an invasion of the body by the tubercle bacillus or as a specific infectious disease caused by the invasion of the body by the tubercle bacillus.

For a more practical working basis it occurs to me that we should consider the disease both contagious and infectious. It is generally accepted now that practically all of our tuberculosis is contracted in infancy or childhood. In many instances the disease is arrested and remains dormant over a period of years or until the invasion of the body by some other disease lowers the vitality and reduces the patients resisting power.

There are only two types of tuberculosis which we may consider of importance in the discussion of this subject at this time: the human and the bovine. We contract most of our tuberculosis by contact. In the fight against tuberculosis there has been a reduction in the number of deaths but not a proportionate reduction in the incidence of the disease. In other words our activities have been centered more on the cure or arrest of the disease and the protection of the sick patient in order to prolong his life rather than the prevention of the disease in others.

Eugene L. Opie and Hans Anderson state that the lesions which occur in the lungs of almost all individuals who die from conditions other than tuberculosis have the characteristics of tuberculosis of childhood; that is, they occur as foci of infection in the substance of the lung and are not more frequent in the apices than elsewhere. Surely it is very logical to believe that childhood tuberculosis is the forerunner of the adult type. Then if adult tuberculosis is to be successfully combated it should be attacked at its source, namely in infancy and childhood.

There is no doubt now that the incidence of tuberculosis infection has been exaggerated in this country, yet we know that around one hundred thousand people die of the disease in the United States every year. We are losing about two thousand people annually in Mississippi from tuberculosis and this does not include the many deaths from other causes in whom tuberculosis was a factor. Von Pirquet in 1909 published statistics from Vienna on 1334 children up to 14 years of age. He showed that 70 per cent of the children gave a positive tuberculin skin test and that 90 per cent at 14 years of age reacted positively to tuberculin. These statistics were adopted as universal and as a standard in this country, but recent data obtained by recognized authorities have proven the extent to which we have been mistaken. It would seem that the incidence of tuberculous infection in children is to a great extent a community affair varying with the prevalence of tuberculosis in the community or city. In Vienna, for instance, it is well known that the disease is rampant and almost every child can be considered a contact. About one fifth of all deaths in Vienna are due to tuberculosis, therefore, it has been thoroughly proven that we could not adopt the statistics of Vienna as being indicative of the prevelance of the disease in this country, yet we know that the prevelance of this disease in our country, and in this state, is alarming. It is estimated that we have constantly in our state from twenty to thirty thousand cases of active tuberculosis. Now if we will just consider for a moment the thousands of little children who are being exposed daily to these active cases and at the same time realize that it

*Read at the Mississippi State Medical Association meeting, Jackson, Miss.

is practically impossible for a young child or infant to be continually exposed in this manner and escape the infection, then we will begin to see the seriousness of our problem.

The prevention of tuberculosis in infancy and childhood should begin first in the prevention of marriage between tuberculous individuals, or if married, to prevent the conception of children. Now let it be understood that we are not so radical as to say that we should prevent the marriage and conception of children in the apparently cured or arrested case. Neither man nor woman has a right to marry when actively ill with tuberculosis, but they may marry and have children when the disease is cured or apparently has been arrested. A thorough physical examination by a competent physician at least every three or four months is advisable in such cases. After such examinations the physician should offer such advice as he deems proper. If a woman who is pronounced actively tuberculous becomes pregnant she should receive the very best of care before, during and after labor. The labor should be handled in such a manner as to prevent the exhaustive bearing down efforts which are likely to produce pulmonary hemorrhage or flare up an old arrested case. In such cases when the child is born it should be immediately removed from the mother and placed in a healthy environment or with a foster mother. The tuberculous mother should never nurse her baby and close contact of mother and child must be strictly avoided The infantorium idea properly supervised by a competent pediatrician would be almost ideal for such cases but the same work may be done in our modern well managed preventoriums.

The work of Prof. Calmette leads us to hope that more frequent employment of his clinical work with B.C.G. (non-tuberculogenic modified bacillus) will perhaps enable the situation to be mastered as far as it concerns the newly born baby of tuberculous parents. According to Calmette, in France alone, up to January 1, 1926, five thousand, one hundred and eighty-three nurslings have been vaccinated by mouth, one thousand three hundred and seventeen of them within the last six to eighteen months. The mortality from birth to one year of infants of tuberculous mothers or of those in infected families is at least 25 per hundred and frequently much higher but that of infants protected by B.C.G. is less than 2 per hundred. This method of immunization is harmless. It does not even involve danger of accident, febrile reaction or physilogic disturbance. The duration of conferred immunity cannot as yet be determined but it appears to be long enough to protect the children from family contamination until after they are three years of age provided the contagion is not too massive. This vaccination should not cause any one to dispense with any hygenic measures which are capable of preventing or lessening massive infection.

Although we have in Mississippi but a very few tuberculous cattle it goes without saying that all dairy cows at least should be tuberculin tested at regular intervals and all tuberculous cattle removed from the herd at once. Just at this point it is well to say that raw or unboiled milk has no place as a proper food for babies under one year of age. All cows' milk should be boiled or at least pasteurized before being fed to babies under one year of age. All anemic, undernourished or underweight children and all contact children should receive the skin or intracutaneous tuberculin test. The positive reaction indicates the existance of tuberculous infection, not necessarily the existence of clinical tuberculosis. If the reaction is positive or if the clinical symptoms indicate tuberculosis the usual hygienic dietietic treatment should be instituted at once.

The diagnosis of tuberculosis in children is a rather difficult job. The signs and symptoms upon which a diagnosis can be made of early tuberculosis are indeed very

few. The diagnosis of early tuberculosis is important from the social aspect and also from an economic point of view. It should be given the attention it deserves not only from the specialist but from the general practitioner as well because it is the latter who will necessarily have the greatest responsibility in the premises. Unfortunately little has been written on the subject of the diagnosis of tuberculosis in infants and children. The medical schools have been woefully negligent along this line of teaching. There remains much confusion and differences of opinions as to what constitutes a basis for diagnosis of incipient tuberculosis in children. There is a great demand by the pediatrician for more light on the subject. It is obvious that if progress is to be made in combatting this much dreaded disease that it must be diagnosed at the earliest possible moment after infection has occurred. It is still more obvious that if further progress is to be made in adult tuberculosis, we must necessarily make the diagnosis during childhood, at which time the infection takes place. The reliability of the intradermal or even the skin tuberculin test of today need not be doubted. Out of 80 patients given the cutaneous tuberculin test by L. Cummins on known cases of tuberculosis a positive reaction was noted in all except three, a total of 96.2 per cent. Those that gave doubtful or negative tests were severely ill with advanced tuberculosis and died within three months. Von Pirquet says that in cases presenting clinical evidence of tuberculosis the reaction is positive in almost all instances after twenty-four hours. J. Claxton Gittings and John D. Donnelly conclude that a positive tuberculin reaction does not occur in the absence of a tuberculous infection. However, there are instances when a child with a tuberculous infection does not react to tuberculin; namely, first—incubation period of tuberculosis; second—acute tuberculous infection with marked constitutional symptoms; third—miliary tuberculosis, tuberculous menengitis, advanced pulmonary tuberculosis and during certain infectious diseases such as measles, 100 per cent, scarlet fever 84 per cent, diphtheria 12 per cent and others as pneumonia, influenza, erysipelas, typhoid fever, and during tuberculin therapy. That a positive tuberculin test reveals a latent tuberculous infection is unquestioned. It is also positively conceded that a positive tuberculin test in an infant and a very young child usually implies an active tuberculosis. Tuberculosis of childhood, particularly between the ages of six to ten years, is a disease of the lymph glands involving mostly the tracheobronchial glands; apical lesions rarely occur before ten years of age. Slater found that the younger child showed involvment of the hilum glands and that the older child beginning with eleven years showed lung involvment. R. Gutterback states that hilum involvment is the most common form of tuberculosis in childhood. It is of great importance to appreciate that, at least in early tuberculosis of childhood, the hilum glands are the only seat of infection. This, therefore, will produce little or no physical signs other than the D'Espine. The parenchyma not being involved in incipient cases, physical signs will therefore be absent. If one awaits the presence of physical signs in the chest and tubercle bacilli in the sputum to diagnose tuberculosis in childhood he will only diagnose the advanced cases or those who have already evolved into the adult type and for whom the prognosis is very grave.

The roentgen-ray helps us but very little in the diagnosis of incipient hilum tuberculosis. It will show us the presence of infiltration with increased density and the presence of nodules, but it is difficult for the radiologist to differentiate the type of infection. It is well to remember that there are many causes for tracheobronchial adenitis, for instance in whooping cough, measles, bronchopneumonia, influenza, chronic bronchitis, lues, Hodgkins disease and asthma. Now to summarize the main points in diagnosis, I will say, that it is

generally accepted that, first, a positive tuberculin test in a child under ten years of age is of much significance and should be given due consideration; second, excluding the conditions noted in this paper a persistent negative tuberculin test indicates the absence of a tuberculous infection; third, excluding tuberculous lesions of the bone and other organs tuberculosis in children is essentially a tracheobronchial adenitis with little or no physical signs except for a positive D'Espine; fourth, the presence of tracheobronchial glands does not necessarily mean tuberculosis and a negative tuberculin test is of great importance in differentiating; fifth, children with incipient tuberculosis are not necessarily underweight, yet it is generally considered that malnourished and underweight children are potentially tuberculous; sixth, sixty-four to eighty-one per cent of school children between the ages of 5 to 14 years who give a definite history of contact become infected; seventh, a definite history of contact, the presence of enlarged tracheobronchial glands and a positive tuberculin test are sufficient grounds to make a diagnosis of incipient tuberculosis in children. Now with convincing statistics that the prevalency of tuberculosis is alarming, and with evidence that about 75 per cent of all children who come in contact with the disease actually becoming infected, surely we may conclude that the task before us is to prevent exposure to open or active cases.

Children showing the signs of glandular tuberculosis should be treated with heliotherapy as a prophylactic measure as early as possible. Natural sunlight is preferable but when it is not available artificial light therapy may be used. General physical therapeutics should be combined with general hygiene and prophylaxis against rickets and general glandular tuberculosis which always include pure cod liver oil. The preventorium or open air schools are of paramount importance. All anemic or pretuberculous, undernourished, actually tuberculous, or rachitic children should have access to the open air school or preventorium. It has been shown that children who attend open air class, although they have fewer lessons, advance in their studies and often even surpass children who spend from five to six hours in the stuffy class rooms of the average schools. Midday luncheon, composed of nourishing food with a liberal amount of pure, wholesome milk, warm, well prepared gumbo soup and buttered toast is strongly advocated. Mental training of children must not be had at the expense of sound physical development. The greatest danger of tuberculosis in the weak, predisposed, anemic or underfed child comes with the approach of, and during the adolescense period. Prophylactic work in this type is particularly deficient. Long hours in badly ventilated class rooms, in college lecture halls, in store or warerooms and lack of proper recreation, irregular meals often insufficient in quantity and quality and unsanitary living in general are leading factors in the development of tuberculosis in the adolescent. According to statistics of the New York Tuberculosis and Health Association in 1924 there were 17 deaths from tuberculosis among boys aged from 10 to 14 years, 44 deaths among girls of the same age; 116 deaths among boys of 16 to 19 and 227 deaths among girls of the same age. Aside from the causes already mentioned the greater tuberculosis mortality among girls may be due to the foolish fad of trying to appear slender. It is suggested that many of the hard working girls who have good appetites follow these restrictions of undernourishment intentionally. As a result of such practices it is suggested that if they have latent tuberculosis or undergo prolonged contact with tuberculous persons, they are almost bound to acquire the disease. There is urgent need in our state for the erection, proper maintenance and management of preventorium, open air schools, and summer camps. A crusade against this foolish fad of undernourish-

ment on the part of our girls and general encouragement to drink more pure wholesome milk from tuberculin tested cows is of value at this time. In this instance it is of interest to mention a startling revelation made by a milk survey which was inaugurated by our very efficient state health officer a few months ago. Now listen, please, at the reading of this paragraph from his report. "The average per capita consumption of milk for the eleven cities was found to be exceedingly low, being only 33 hundredths of a pint. The highest per capita consumption was 56 hundredths of a pint". Now just think of this. Certainly we need to emphasize the importance of drinking an abundance of good wholesome milk. Physical condition also should be considered in a choice of occupation for young people. A thorough physical examination should precede the choice of any occupation for boys and girls. Annual periodic health examintions for every child and adult is the greatest safeguard against the development of tuberculosis in children and the most effective means of combating tuberculosis in adults. We must remember that the child of today is the man and the citizen of tomorrow.

Let us put our shoulders to the wheel and help the Board of Health push any well organized plan of disease prevention and more especially seek sufficient appropriations for our institutions for the prevention and cure of disease. Education of the masses in the methods of prevention of tuberculosis in infancy and childhood as well as in the adult will untimately lead to victory.

DISCUSSION.

Dr. Henry Boswell (Sanatorium): Inasmuch as I do not know anything about tuberculosis and the control of it, I shall be brief in my discussion.

The control of tuberculosis in this State was studied very carefully many years ago. Dr. Garrison, who has just read this excellent paper, was a member of the Board of Health at that time and understands and knows the plans on which the work was originally started—to have our institution down at McGee as a center of education, bringing in the people as rapidly as we could educate them to other methods of control of the disease. He has discussed here control of the incidence of the disease among the people of this country. Of course, we have not anything like the incidence of the disease in European countries, especially since the close of the war. Another thing that lowers the incidence of the disease in our State is our tremendous negro population. That statement will probably surprise you; but the incidence of tuberculosis among the negroes is nothing like the incidence of the disease in the whites, for the reason that a negro developing the disease dies quickly and is out of the way, while a white developing the disease may carry it for forty or fifty years, being a carrier all that time and spreading it to the young life.

It is quite possible, we know, that every case is not a childhood infection, because if you are exposed to an overdose of tubercle bacillus or any coccus you may develop the disease. There is no such thing as absolute immunity; if a sufficient dose of any germ is given at one time to any individual he will come down with the disease. That accounts for acute tuberculosis in adult life. Most of our negroes have acute tuberculosis, and they may not develop it until fifty or sixty years of age. He has not carried it from childhood; a slight infection today with him is a tremendous affair tomorrow.

The prevention of the disease in children is a widespread thing; it is a community proposition. If it is in the community the children are exposed to it, regardless of whether or not it is in the home. A physician in New York found that positive von Pirquet reactions were higher in the children where no positive history of contact in the homes could be elicited. It is the carrier that is carrying it about and extending it to them. Calmette's work offers probably one of the most pleasing looking things now. While the United States has not taken hold of it, except in isolated cases, yet the Dominion of Canada has on now a tremendous compaign over a large territory and in a large population to work out Calmette's beginning experimentation. Dr. Calmette has been working on this for more than forty years now, and it looks as if the old man in the evening of his life is going to give us something worth while. I get his reports every month from Paris. While it will take twenty-five or fifty years to decide how long the immunity he has established will last, yet it will be a wonderful thing. I heard one physician stand up and make this positive statement—when any man can make a physical examination and say this child has pulmonary tuberculosis, he is too far advanced to save; if a radiologist can say this child has pulmonary tuberculosis, he is too far gone to save.

But, as Dr. Garrison said, when you have a history of contact and evidence of a beginning sickness in the child, begin treatment against tuberculosis right away. In the children I have in the sanatorium we have only two that show positive physical signs in the chest, and both of them are hopelessly ill. They look like healthy children, but if we let them get up out of bed for a little while and walk over to the dining room, the next day they will be very sick children.

We have a wonderful lot of research work going on, and I wish I had time to tell you about it. The treatment of the disease in children is just what Dr. Garrison told you. Remember that codliver oil and sweet milk contain the vitamin (A) which is necessary not only for cure, but for prevention. He mentioned in the paper that probably the desire on the part of young girls to be slender is responsible for the increase in tuberculosis. There is no question that it is responsible. In five years in Mississippi the only increase in one age group in tuberculosis is in young people between the ages of fifteen and twenty-two—the age when they are out in automobiles riding around, stopping at drug stores to get a drink at meal time, the age when they want to be so miserably slender. There is no question about it.

Some of you fellows may get to think that I am more incompetent than I am as the head of your institution. From the State's standpoint, that institution is the beginning of a campaign to control tuberculosis. The disease will never be controlled by treating anybody's individual case. The treatment of the thing is incidental to its control, and the State is in it to control it in the future; otherwise the State has no business in it. We are spending thousands of dollars a year, and unless we treat it with the idea of its future control we are pouring money in a rat hole, and there is no sense in it. That institution is built ahead of the game. It is built to treat tuberculosis, because you fellows and the public demand that the individual case be treated. The first thing we should start out with is a preventorium, but if we did we could not get you fellows to send the little children to us. We need another thing, and that is a home for the incurable cases, particularly for the indigent negro, who is carrying the bacilli to your children and mine. Our sanatorium stands on that foundation, and we want you fellows to wake up to that paper presented by Dr. Garrison—that we are planning for the future. Remember, when you are applying to me to admit patients to that institution, when you are looking at the patient's side and your heart is bleeding for him, so is mine, more than yours, because I have fought the battle, I have been through the game; but I have to look at it from the viewpoint of ten or fifteen years from now and scatter them over the State of Mississippi so that they will be apostles of better living. One of the doctors said yesterday the best helper he had in his community was a returned patient who went around and visited his patients and taught them how to live and how to take the cure.

I hope you will carry that thought with you, that the institution down here is the beginning of a campaign to control tuberculosis, that it is an educational institution. You come to me and say that you have a patient who is infecting a whole family; that he is dying with tuberculosis and you don't think I can cure him, but you want me to take him out of that community. But that is too late; he has already infected everybody. It will do no harm to let him stay six months longer and die among his own loved ones. The fellow we want is the curable case that will go back and be a missionary in his own community.

I want to express my appreciation to Dr. Garrison.

I heard it said yesterday that there are not more than four or five hundred cases in this State. I want to say that I have in my files down there, signed by you doctors of Mississippi, nine thousand reports of cases in which you found bacilli in the sputum and God knows how many more there are.

Dr. Garrison (closing): I don't know that I have anything further to say. Dr. Boswell has kindly emphasized everything I have gone over. We are shoulder to shoulder in this fight. I take a little pride in and like to remind the association that really this institution is yours anyway. The tuberculosis sanitorium is an infant of the State Medical Association. We started it down at Hattiesburg, at the meeting there. I was placed on the committee, Dr. Dan Williams and Dr. Leathers and I, and we fought the thing through the legislature, and it is really your child. As Dr. Boswell says, it is a mere beginning. I want to say in defense of Dr. Boswell's work (if it needs any defense; it does not from men who know the character of the work he is doing) that he is doing the best work in the United States today; there is no doubt about it. If any of you gentlemen have any sympathy with the criticisms that have been passed out here, you are entirely wrong, and you will regret it in the days to come. So let's get in this fight and put it over and prevent the little child and the infant from being exposed. That is the focus of this work.

I want to thank Dr. Boswell and all you gentlemen for the interest that you have displayed.

SUBPHRENIC ABSCESS.*

ALTON OCHSNER, M. D.,

NEW ORLEANS.

Of the various late complications following a suppurative process within the abdominal cavity, a subphrenic abscess is one of the most feared. This abnormal condition was first described by Barlow, in 1845, who distinguished it from pulmonary lesions. Leyden, in 1886, again described the clinical picture of subphrenic abscess. Unfortunately, the clinical picture described by these two pioneers, very commonly, is considered the classical picture of subphrenic abscess today, that is, the liver dulness is covered by a tympanitic zone, which, in turn, is covered by a zone of dulness produced by a pleural exudate. The tympanitic zone is produced by a gas bubble in the subphrenic abscess floating on top of the purulent exudate. This description represents only a terminal stage of the condition, and if these signs are anticipated, many cases of subphrenic abscess will be overlooked, and also considerable time will have been lost in the treatment of the patient.

The first operation for subphrenic abscess was recorded by Volkman, in 1875. Since this time, much has been written concerning the subject, especially in regard to the anatomy, pathology, symptomatology, and treatment.

The anatomy of the subphrenic space was worked out by two French observers, Martinet, in 1895, and Piquands, in 1910. Barnard, in 1908, classified the subphrenic spaces in much the same manner as Martinet. Martinet described six subphrenic spaces, two located between the liver and diaphragm, one on each side of the mid-line and separated from each other by the falciform ligament. On the under surface of the liver were four spaces, one on the right, which is bounded on the left by the hepatoduodenal ligament, three on the left—one in the lesser peritoneal sac, another beneath the liver anterior to the lesser omentum, and a perisplenic space located around the spleen. Barnard described five spaces—two on the right and three on the left; on the right an anterior subphrenic space located between the liver and the diaphragm and a posterior subphrenic space on the under surface of the liver; on the left, a space anterior to the lesser omentum, the perigastric space; a perisplenic space, and the lesser peritoneal cavity.

As these classifications did not seem to cover the cases clinically, several years ago Nather and I, while in Clairmonts Clinic, devised anotomically on the cadaver the following classification, which fits most cases of subphrenic abscess clinically:

In a surgical sense we can consider a subphrenic abscess as a localized inflammatory process in one of the spaces located between the diaphragm above and the transverse colon below. This area is divided by the liver into an infra—and a suprahepatic portion. The suprahepatic space is located between the diaphragm above and the superior surface of the liver below. It is again divided into a right and left space by the falciform, or suspensory ligament, the lower free edge of which is the round ligament which continues to the umbilicus. The coronary ligament, which is the reflexion of the peritoneum from the under surface of the diaphragm onto the superior surface of the liver, divides the right superior space into an anterior and posterior space. The left prolongation of the coronary ligament, which is known as the triangular ligament or left lateral ligament, passes backward to lie at the posterior edge of the left lateral lobe, so that on the left side there is only an anterior superior space. The right prolongation, or the right lateral ligament, passes somewhat anteriorly, dividing the right superior space into a large anterior and a small posterior space. The retroperitoneal space consists of that area enclosed within the

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limits of the coronary ligament, and is in contact with those portions of the liver and diaphragm which are not covered by peritoneum.

The infrahepatic space, which is that located between the liver above and the transverse colon below, is divided into a right and left inferior space by the round ligament and the ligament of the ductus venosus. The left inferior space is again divided into an anterior and a posterior space by the lesser omentum, the space lying posterior to the lesser omentum is the lesser peritoneal cavity, and that lying anterioly is known as the left anterior inferior space.

ETIOLOGY.

The etiology of a subphrenic abscess is often varied. By far the greater percentage of cases, however, follow an acute infectious process somewhere within the peritoneal cavity. It is possible, though, to have an infection occur in the subphrenic space from some focus not within the abdominal cavity, or there may be extension from some adjacent viscus, which is also not within the abdominal cavity. As stated, however, suppurations within the peritoneal cavity are responsible for most of the cases. It might be said that any condition giving rise to either a general or localized peritonitis is potentially a subphrenic abscess. This, undoubtedly, is a very radical statement, but still I feel if we consider the possibilities offered us that fewer failures in diagnosis will be made.

Of the various suppurative lesions giving rise to a localized infection in the subphrenic space, an acute appendicitis, possibly because of its greater frequency, is the most common offender. The percentage varies considerably according to different observers. Fifield and Love, in a series of 78 cases, had 30 which followed an acute appendicitis, giving a percentage of 38.4. Lance had a percentage of 20, while 66 per cent of Clendening's cases were caused by appendicitis. The second most frequent intra-abdominal lesion which is responsible for a subphrenic abscess is a perforation of either a gastric or duodenal ulcer. In Fifield and Love's series of cases this was responsible for 20 per cent. Suppurative lesions of the other viscera, such as the liver, gall-bladder, spleen, large intestine, and pleura are also responsible for subphrenic infections, but to a less degree.

Infection may gain entrance to the subphrenic space in a number of different ways. First, direct extension by way of the peritoneal cavity along the para-colic groove to the righ kidney pouch. This is probably the most frequent mode of entrance. Second, through the lymphatics—either the peritoneal or retroperitoneal lymphatics. Third, by the portal system. In this type of case there is a pylephlebitis with a production of a liver abscess which ruptures into the subphrenic space. Fourth, a rest abscess. Following a general peritonitis the remainder of the peritoneal cavity may be able to take care of the infection, but in the subphrenic space there remains a localized process which goes on to abscess formation. Ullman and Levy believe those infections which occur as the result of direct extension are located intraperitoneally, those which follow extension through the cellular tissues are retroperitoneal, and those which extend by the lymphatic system may be either intra- or extra-peritoneal.

There is some variance in the opinion of various observers as to the type of causative organism most frequently found in subphrenic abscess. Allen states that even though most of these abscesses follow an appendiceal infection, the staphylococcus is the offending organism in almost all cases. Fifield and Love found the colon bacillus in 33 per cent of their cases and an equal percentage contained staphylococci. Streptococci were responsible in about 1 per cent and about 2 per cent were sterile. Our experience has shown, however, that the B. coli is the most frequently found organism.

PATHOLOGY.

The pathology depends entirely upon the resistance of the individual and the virulence of the organism. Undoubtedly many cases of subphrenic inflammation and infection occur which go on to resolution and do not give the signs and symptoms of a subphrenic abscess. These, in my mind, are much more frequent than the cases of subphrenic abscess. Lee, in 1915, reported four such cases of subdiaphragmatic infection which did not go on to abscess formation. In all four cases there were sufficient clinical signs and symptoms to make a diagnosis of subphrenic infection. All, however, recovered spontaneously. In one, a first stage operation and a transpleural drainage was done. The patient's symptoms, however, cleared up before the second stage operation. Clendening reports another case of subphrenic inflammation which subsided spontaneously. In this same report he describes another unusual manifestation of a subphrenic inflammation, and that is, serous effusion in the subphrenic space. A patient with signs of subphrenic abscess was operated on for an acute cholecystitis. An empyema of the gallbladder was found, and in the subphrenic space between the liver and the diaphragm there was a large collection of serous fluid. Ever since my attention was directed especially to this condition by a case observed in 1922, which was described in detail in a previous publication, I have become convinced that an inflammation of a subphrenic space is not an infrequent accompaniment of a suppurative process within the abdominal cavity. It is certainly a much more frequent complication of a ruptured appendix than Allen would lead us to believe. He states that the incident of production of subphrenic abscess following appendicitis is between three and four-tenths of one per cent. One per cent of all cases of ruptured appendix is the figure given by Dexter as the incidence of subphrenic abscess.

To demonstrate this point further, I wish merely to report rather briefly a proven case which has been observed within the last six months. A female, aged 22, was admitted to the hospital because of abdominal pain. She stated that three days previously, shortly after her noon meal, she was taken with rather a severe pain in the epigastrium, which radiated to the right lower quadrant. Shortly after this she vomited. The pain persisted in the right quadrant, but within the last twenty-four hours she experienced a pain in the right upper quadrant also. There were no chills. The vomiting persisted. Physical examination revealed nothing of interest except a slightly distended abdomen, distinct tenderness and rigidity throughout the whole right side of the abdomen, for the most part over McBurney's point and in the right upper quadrant and in the right flank. There was also a rebound tenderness. Because of the rather typical history and physical findings, it was thought that the girl was suffering from acute appendicitis with an associated cholecystitis. Conservative therapy was decided upon because of the acute cholecystitis, and the patient was treated with rest in bed and hot applications to the abdomen. The acute symptoms rapidly subsided, so after about ten days a laparotomy was performed. The appendix showed all the stigmata of a recent infection, but much to our surprise, the gallbladder was apparently normal. In exploring the subphrenic space, however, a localized area, measuring about five centimeters in diameter, composed of fibrinous adhesions, was found between the under surface of the diaphragm and the liver. These adhesions were so fresh that they could be easily broken with the finger and were undoubtedly the result of a subphrenic inflammation which was subsiding. They easily accounted for the symptoms and signs which we found at the time of the patient's admission to the hospital. The patient made an uneventful recovery.

A supposedly frequent accompaniment of a subphrenic abscess is a pleural effusion. This pathologic condition is only frequent in those cases in which the condition has been allowed to progress for a sufficiently long enough time that either toxins or organisms themselves, have passed through the diaphragmatic lymphatics into the pleural cavity. One should not wait until this complication develops before diagnosing a subphrenic abscess. Clute states that "it is almost always true that a simple serous fluid will be present in the chest when there is pus just beneath the diaphragm." In six cases reported by Dexter the diagnosis of pleurisy was made before the diagnosis of subphrenic abscess. He remarks: "Obviously, it is highly desirable to drain the abscess before the structures above the diaphragm are involved. In reviewing the subject, as well as the cases which have come under my own observation, it is striking to know how seldom a diagnosis is made early enough to accomplish this." Baumann states that an associated pleural exudate occurs in 20 per cent of cases. Those cases of subphrenic abscess which are complicated by a pleural effusion offer a much greater problem in diagnosis than those in which this complication is not present. The first two cases of subphrenic abscess which I observed I treated for several weeks as a post-operative pleurisy without any results.

A certain small percentage of subphrenic abscesses contain air. These, however, are either late cases or follow the perforation of either a duodenal or gastric ulcer. The air results from gas producing organisms, or it may escape from one of the hollow viscera. Lockwood states that it is found in about one-third of all the cases. While this figure may be true of the more advanced cases, it is certainly not true of the earlier lesions. The percentage given by Phillips is 50 per cent. Hodges has maintained that abscesses containing air are not common. Berman gives the incidence as 15 per cent. The earlier the diagnoses are made the lower the percentage of abscesses which contain air will be observed. For this reason, very little significance should be placed upon this finding as a diagnostic aid.

Of the various subphrenic spaces most frequently involved in an inflammatory process, the small triangular shaped right, superior, posterior space is most important. It is the site of a localized inflammatory process in from 38 per cent (Fifield and Love) to 50 per cent (Nather and Ochsner) of all subphrenic abscesses. Of those subphrenic abscesses occurring following a ruptured appendix, the right posterior superior space is involved from 50 to 80 per cent of cases. The right anterior superior space is the space next most frequently involved, and this is followed in frequency by the right extraperitoneal space. Very commonly, associated with an abscess in the right posterior superior space, is also an abscess in the right inferior or infrahepatic space. This combination I have seen in three cases. A similar case was described by Straus in 1923.

SYMPTOMATOLOGY AND SIGNS.

The early symptoms of a subphrenic inflammatory process are very vague and indefinite. Following a suppurative or an acute inflammatory process in the abdominal cavity, the patient does not get along as well as one would naturally expect him to do. The temperature, instead of falling to normal, may persist and may, after a period of time, slightly rise. There may be little or no alteration in the pulse rate. A slight leukocytosis is practically always present. In those cases in which the right posterior superior space is involved there is a localized tenderness over the tip of the twelfth rib, which usually remains constant. The patient may complain of pain in this region, or the pain may be referred to the chest. If these physical signs and symptoms persist over a period of days and remain constant, a positive diagnosis of subphrenic infection may be made. There

is an early and associated immobility of the diaphragm, later to be followed by an elevation of the diaphragm, which may at times reach up as high as the level of the third rib. As the condition progresses there develops a pleurisy with friction rub at the base of the lung which may be followed by a pleural exudate. It is at this stage that a diagnosis of pleurisy with effusion is most commonly made.

The roentgen-ray is of great assistance in making a diagnosis of subphrenic abscess. Pancoast, who reports sixteen cases of subphrenic abscess in which the diagnosis was made roentgenologically, states that in diagnosing this condition by means of the roentgen-ray it is of utmost importance to have a good clinical history. As brought out by LeWald, Pancoast, and O'Brien, the roentgenological findings are, briefly, as follows: There is an elevation of the diaphragm on the affected side, much higher than is usually found in cases of simple pleural effusion. The diaphragm is immobile. There may be some retraction of the lung. In those rare cases in which air is found in the subphrenic space the diagnosis may be easily made, because of the absence of shadow between the pus below and the diaphragm above. In order to make use of this phenomenon, W. H. Stewart, of this country, and Schintz, of Switzerland, have even advocated the injection of aid into the subphrenic space in order to visualize the abscess. This procedure, however, is not without danger and should not be attempted.

Douglas has emphasized the importance of taking radiographs in either the sitting or the standing position. If the patient's condition is such that this is not feasible, an anterio-posterior plate should be made with the patient lying on the unaffected side. In this way, more can be told about the position of the diaphragm than an anterio-posterior view with the patient lying on his back. In spite of a suggestive history and in spite of positive roentgen-ray findings, a diagnosis of subphrenic abscess is very frequently delayed until very late, as illustrated by a case reported by Cottle in 1923. The patient had had an appendectomy and excision of a gastric ulcer, following which he developed symptoms and signs of a right sided pleural lesion. Roentgenograms showed, however, a high diaphragm on the affected side. The diagnosis was disputed for three and a half months, and it was not until four months after the original operation that a diagnosis of subphrenic abscess was made, which abscess was drained successfully with complete cure of the patient.

In those doubtful cases of subphrenic abscess one is justified in attempting an exploratory puncture in order to see if fluid is within the subphrenic space. Ullman and Levy advocate an exploratory aspiration. Hirsch reports a case of a physician in whom twenty-three exploratory aspirations were done without any result. On the twenty-fourth aspiration pus was obtained. He emphasizes the fact that if aspiration is to be done, that it should be done over the area of relative dulness, which is that produced by the fluid, and not over the area of absolute dulness which is produced by the liver. Allen and Douglas take a slightly more conservative attitude concerning exploratory aspiration. They believe that in the doubtful case one is justified in aspirating. Lockwood and Hodges, however, condemn the practice of promiscuous needling, because of the danger of infecting either the uninvolved pleura or peritoneum. I also feel that exploratory aspiration should never be carried out, except to determine the character of an exudate within the pleural cavity. No attempt should be made to aspirate a suspected cavity beneath the diaphragm, unless everything is ready for operation, and then every precaution should be taken to avoid injuring or penetrating the pleural or peritoneal spaces. In order to do this, it is advisable to insert the aspirating needle, which is attached to a dry syringe, in the posterior

axillary line at the level of the spinous process of the first lumbar vertebra. The needle is directed upward and backward at an angle of less than forty-five degrees. Aspiration should be carried out during the introduction of the needle, so that there will be no danger of encountering an abscess and passing through it unrecognized. Under no other circumstances should an exploratory aspiration be done.

PROGNOSIS.

The mortality of all the subphrenic abscesses reported to date varies from 23 to 100 per cent. Fifield and Love report a mortality of 50 per cent in all of their cases. Of the fifty-nine cases operated on there was a mortality of 32 per cent. Lockwood states that from 85 to 100 per cent of those not operated on die, whereas of all cases taken, whether operated or not operated on, the mortality is 56 per cent. Most patients who have been treated surgically have a mortality from 23 to 40 per cent. The following percentages have been given by the various observers: Hodges, 50 per cent; Eicher and Kidzey, 50 per cent; Baumann, 66 per cent; McEachern, operated, 33 per cent, not operated, 75 per cent; Tuft, 66 per cent; Lotsch, operated, 33 per cent, unoperated, 100 per cent.

From these figures it can be seen that under the present method of treatment the mortality in subphrenic abscess is extremely high. It is because of this appalling mortality that the abdominal surgeon has come to fear the development of a subphrenic abscess. What is the cause of this high mortality? In analyzing the cases reported in the literature one is immediately impressed by two considerations: First: That by far the majority of cases are advanced and show extreme pathology at the time the diagnosis is made. This means that the patient's resistance has been so reduced by a long continued septic process and that a recovery is not as likely as in an individual whose illness dates back a comparatively short time. Were the diagnosis made and proper therapy instituted earlier this high mortality would be reduced to a remarkable degree. The second fact that impresses one is that many of these patients operated upon develop signs and symptoms of either an empyema or a peritonitis, which, undoubtedly, is a factor in the cause of death. If the involvement of the pleural and peritoneal cavities is a cause in raising the mortality, is there any way in which we can prevent complications?

TREATMENT.

The treatment of subphrenic abscess may be divided into three different types:

1. Prophylactic. The prophylactic treatment consists of placing all patients with a suppurative process within the peritoneal cavity in the Fowler's position in order that the infectious material may gravitate into the pelvis. Large amounts of fluids should be given, either under the skin or intravenously, which are, in turn, secreted into the peritoneal cavity, diluting the infectious material and washing the purulent material into the pelvis. The delayed or conservative treatment of those cases of ruptured appendix seen after thirty-six to forty-eight hours will prevent many cases of subphrenic abscess. This has been emphasized by Fifield and Love. They found that in 228 cases treated conservatively at the London Hospital a subphrenic abscess occurred only in one case, while 1109 cases subjected to immediate operations, 7 were complicated by subphrenic abscess. During intraperitoneal operations it is of utmost importance to protect the general peritoneal cavity in order to prevent it from being soiled. Adequate drainage, especially in those cases where there is a localization of the process should be performed, which will undoubtedly reduce the incidence of a subphrenic abscess formation.

2. Conservative treatment: It is essential to diagnose a subphrenic infection as early as possible, so that the proper therapy may be instituted. In the case of a patient who has recently had a suppurative process within the peritoneal cavity,

and whose condition does not clear up as well as might be expected, and one who presents the early signs of a subphrenic abscess, a diagnosis of a subphrenic inflammation may be made and conservative therapy instituted. The conservative treatment consists of keeping the patient as quiet as possible; immobilizing the affected side of the chest with adhesive plaster; applying heat to the affected side, either by electric pads, hot water bottles, or diathermy; and the building up of the general resistance of the patient. By far the greater number of subphrenic infections will respond to this therapy. Fewer will go on to suppuration if the therapy is instituted early, instead, the inflammatory process will clear up by resolution.

3. Treatment after the development of an abscess: Once a subphrenic abscess has developed, as evidenced by the hectic type of temperature, marked increase in leukocytes, and increase in amount of tenderness over the affected area, which may or may not be accompanied by an edema, drainage of the abscess is indicated. The proper operative procedure employed depends entirely upon the location of the suppurative process. In the past, by far the greater number have been drained by the transpleural route, because of the high location of the abscesses, which virtually lie within the thoracic cage. Those abscesses lying anteriorly, and which tend to point anteriorly, have been drained through an anterior or trans-abdominal approach. Some few have been drained through the loin. While anatomically the transpleural and trans-abdominal routes may be the ideal procedures, they still have certain definite disadvantages, in that they require traversing one of the large serous cavities. While it is true, theoretically at least, that an infection of the serious cavity may be prevented by performing the operation in two stages, still statistics have shown that the results obtained from the use of these approaches are from satisfactory. Fifield and Love had a mortality of 43.7 per cent in those cases which were drained transpleurally, a mortality of 23.8 per cent in those drained through the anterior abdominal wall, and a mortality of 16.7 per cent in those drained through the loin beneath the twelfth rib. Lockwood, who states that the mortality of all the cases of subphrenic abscess is between 23 to 40 per cent, believes, however, that it should not be higher than 16 per cent. As a protection against the development of empyema, he advises an intercostal incision, following which the intercostal muscles are sutured to the diaphragm. The skin edges are then mobilized and also sutured to the diaphragm. In this way he believes that not only can a wound phlegmon be prevented but also an infection of the pleural cavity. Orsos, in Germany, advocates a similar procedure in that in place of the one layer suture he used two layers, and believes in this way to be able to prevent an empyema. He reports two cases, both of which were cured.

Within the past year McEachern has advocated the closed method of drainage, which consists of inserting a tube into the abscess cavity, usually in the tenth interspace, an attempt being made to keep the connection air tight. The cavity is irrigated with Dakin's solution, according to the Carrel technique. He reports two cases, both of which were cured. One patient, however, developed an empyema following the drainage of the subphrenic abscess, which probably was due to an infection introduced into the pleural cavity at the time of the drainage. This is one of the great disadvantages of the method, because it is impossible to tell whether there are adhesions between the two layers of parietal pleura or not. McEachern mentions another disadvantage; that is, multiple abscess pockets may be overlooked. He believes, however, that in the severe cases that the operative procedure is of decided value.

THE RETROPERITONEAL APPROACH.

In 1923 Nather and I described an approach which is applicable, especially for

those abscesses located in the right superior posterior space—which is the most frequent location for a subphrenic abscess. The success of the retroperitoneal operation depends upon the fact that the peritoneum on the under surface of the diaphragm is only loosely attached to the diaphragm; also, that the peritoneum, as is reflected down from the under surface of the diaphragm is continuous below with the renal fascia. This loose attachment of the peritoneum to the under surface of the diaphragm is present in normal individuals and can be readily demonstrated on the cadaver, permitting an easy separation of the peritoneum from the diaphragm. This can be even more readily done in those cases where there is an inflammatory process in the subphrenic space, because of the edema which is located sub-peritoneally. The technique of the retroperitoneal operation is, briefly, as follows:

A skin incision is made over and parallel to the twelfth rib; the twelfth rib is resected subperiosteally throughout its whole length. A transverse incision through the soft parts is made at the level of the spinous process of the first lumbar-vertebra. In employing a transverse incision at this level the pleura will be sure to be avoided. The incision is carried through the musculature down to the renal fascia. The renal fascia is followed upward, above it is continuous with the peritoneum. Usually the free edge of the liver may be seen through the peritoneum. At this stage of the operation it is desirable to insert a needle into the subhepatic space, in order to determine whether an infra hepatic abscess in the right inferior space is present or not. If pus is obtained, the abscess is not drained, but this part of the wound is packed until an exploration of the supra-hepatic space has been made. Wide, broad, blunt retractors are now placed in the upper edge of the wound elevating the edges of the ribs and diaphragm. With the index finger of the right hand the peritoneum is separated from the under surface of the diaphragm. This occurs without any difficulty. The surface of the liver is explored with the index finger, and as soon as the abscess cavity, which can be easily felt, is located, the wall of the abscess is broken through with the finger, thus allowing evacuation of its contents. Two large fenestrated rubber tubes are introduced into the cavity and brought out through the wound to serve as drainage tubes. In those cases where pulmonary symptoms have been present before, it is desirable, before draining the supra-hepatic abscess, to aspirate the pleural cavity—which can be easily done in the costophrenic angle. If no pus is obtained at this aspiration nothing further is done as far as the pleural caviety is concerned. If, however, pus has been obtained from the pleural cavity, the empyema may be drained at the same time by opening the costophrenic angle just above the diaphragm. A fenestrated rubber tube should then be inserted into the pleural cavity, also.

The retroperitoneal operation is the operation of choice in those cases in which the abscess is located posteriorly, which is, as has been stated, the most frequent site of abscess formation. By this procedure the abscess is drained without traversing either of the large serous cavities, thus obviating the danger of either a peritonitis or empyema.

For those cases of subphrenic abscesses located anteriorly a similar approach, described by Clairmont, and spoken of as the pre-peritoneal operation, is the method of choice. This is carried out through a ten centimeter long incision over and parallel to the anterior costal arch. All the structures are divided down to the peritoneum. If there is an abscess present, either in the inferior or superior space, the peritoneum shows a very characteristic change in that it is edematous and friable. The peritoneum is then dissected upward from the under surface of the diaphragm in a way similar to that done in the retroperitoneal operation. Broad blunt retractors are

placed above, elevating the diaphragm and the costal arch. After a separation of the peritoneum from the under surface of the diaphragm for a short distance, the inferior edge of the liver usually becomes visible. At this stage it is desirable to aspirate the infrahepatic space, in order to determine whether an abscess is present in his space or not. The superior surface of the liver is then explored with the finger, and after locating the abscess, it is drained, as in the retroperitoneal operation, by breaking through the pyogenic membrane with the index finger. The advantages of the preperitoneal operation are the same as those of the retroperitoneal operation. If pus is not located by means of either one of these approaches, very little harm has been done the patient. The wound can be sutured, and the subphrenic space explored through the other approach.

CONCLUSIONS.

1. Subphrenic infections are not infrequent, and follow a large percentage of intra-abdominal suppurative processes, chiefly appendiceal.

2. By far the greater number of subphrenic inflammatory processes subside, especially if proper therapy is introduced early.

3. Careful clinical observation of a patient who has had a suppurative process within the peritoneal cavity will usually suffice to make a positive diagnosis of a subphrenic infection when such occurs. The roentgen-ray is a valuable aid in diagnosing the condition.

4. The treatment of a subphrenic infection is divided into prophylactic, conservative, and radical methods. Most cases of subphrenic infection respond to conservative treatment.

5. In a subphrenic abscess an uninvolved pleural or peritoneal cavity should not be opened.

6. The retro- and pre-peritoneal operations are the procedures of choice, because of the avoidance of the large serious cavities and the lack of shock caused by the operations.

7. The mortality following the retroperitoneal operations for subphrenic abscess has been 6 per cent.

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DISCUSSION.

Dr. J. A. Danna (New Orleans): I believe you will all agree with me in that it is more difficult to discuss such a comprehensive monograph as the one that has just been read and my only reason for rising to do so is that I have been announced as the discussor.

I think the paper is timely because it teaches us a lesson, teaches us that we are passing up diagnosing these cases and waiting until they are so far advanced that it very easily accounts for the bad name that a subphrenic abscess has. Whenever one speaks of a subphrenic abscess it implies a very sick patient: this should not be the case if the patient who is apt to develop a subphrenic abscess receives the personal attention that he should be given. Whenever a patient (as stated in the paper) has an abdominal infection and will not clear up, does not improve as he should, has a little fever, etc., look for evidence of a subphrenic abscess. If the paper does nothing more than call attention to the fact that many of these cases die because they are not diagnosed early and makes us watch more carefully in the future for this condition, it will have accomplished a great deal.

The doctor brought out the fact that pleural effusion complicates these cases very often and that is where we go astray. When dealing with a pleural effusion we feel that the condition is intrathoracic, above the diaphragm—we go on and treat the patient above the diaphragm and the condition gets worse.

Speaking of aspiration. The doctor cites a case where aspiration was done twenty-four times before finding pus. The reason why repeated attempts so often fail to demonstrate pus is because it is very hard to get a needle large enough sometimes for pus to come through. Do not be satisfied even after you have stuck a large needle in a supposed cavity if no pus is withdrawn; do not take it for granted there is no pus; the pus may be of a consistency that will not go through the needle.

I have had some experience with the incision the doctor speaks of in approaching these cases through the costal arch. Make the incision on the costal border, split your soft tissues down to the rib and then sort of peel them from under the ribs; you will find that your peritoneum and possibly some of the fibers of the diaphragm will separate easily and you can reach up with the finger and get at the abscess between the diaphragm and liver very readily. I am sorry Dr. Oshsner did not go more into detail about that retroperitoneal incision. We need not grope about getting into this abscess behind; the technique worked out by Dr. Ochsner in 1923 is a very nice method which gives you a clean job and a very thorough result.

As I said a while ago, it is rather difficult to say anything after everything has already been said.

Dr. I. M. Gage (closing): I have nothing in the way of discussion to add, but wish to thank the Society for the extension of time granted to complete the reading of Dr. Ochsner's manuscript, and also thank Dr. Danna for his discussion.

After the meeting, to anyone who is interested, I will be more than pleased to demonstrate the retroperitoneal incision on the cadaver.

BERIBERI ("MALADIE DES JAMBES") IN LOUISIANA.—Four patients from the rice belt are reported on by Scott and Herrmann, sick with what they termed "maladies des jambes." Of these, two had definite beriberi, while in the other two the picture of an acute nephritis predominated. There were ten cases in the parish prison besides the four true cases of beriberi received at the charity hospital. One prisoner died on the way to the hospital from the jail and two were sent to Baton Rouge. Eight of those detained are said to have been relatively mildly affected and recovered when the diet was changed. Altogether, eight prisoners were admitted to the hospital with edema and questionable cardiac lesions, but three were undoubtedly not to be classed as having true beriberi. It may, however, be assumed that preexisting heart disease was adversely influenced by the nutrition. They conclude that "maladie des jambes," the nutritional disturbance frequently encountered among the rice farmers of Louisiana, is identical with the neurodegenerative syndrome classed as the "wet" type of beriberi in oriental countries or the sporadic outbreaks of neuritic edema in prisons, asylums, on shipboard, or in war. The outbreak of jail beriberi and aggravated heart lesions in the parish prison was provoked by a monotonous diet, which, though plentiful enough, was deficient in essential vitamin constituents. Though authorities may still be divided on the true etiology, the authors consider a deficiency of vitamin B in the diet as the principal cause.—J. A. M. A., 90:2083, 1928.

THE TREATMENT OF BURNS.*

R. A. CUTTING, M. D.,

NEW ORLEANS.

The responsibility of dealing with cases of burns is a legacy which has been handed down by tradition to the general surgeon—a bequest which, though apparently logical enough, he has too frequently accepted with diffidence or even reluctance. The temptation to esteem the spectacular and avoid the commonplace has operated to retard the progress of knowledge with respect to burns as in few other surgical conditions.

DEFINITION.

Burns have usually been defined as lesions caused by raising the temperature of a part to a degree incompatible with its normal functioning, or, more comprehensively, as a special type of wound due to the action of heat, chemicals, electricity, or radiant energy. To this conception, as will be shown presently, one must add, as a result of the contributions of various fairly recent investigators, that toxemia is also an essential part of the picture.

CLASSIFICATION.

The classification of burns has been both according to the causative agent, as mentioned above, and also according to the depth of the wound; most commonly three degrees of burns are described in the United States: (1) erythema, (2) bleb formation, and (3) eschar; occasionally Dupuytren's classification into six degrees is preferred: (1) erythema, (2) dermatitis, with bleb formation, (3) sub-total destruction of the skin, (4) complete destruction of the skin, (5) destruction of the superficial structures to, and including, the muscular layer, and (6) carbonization of muscles.

It is at least questionable whether the action of radiant energy on tissues should be described as a burn. Probably such lesions should be given a chapter of their own.

Electrical burns have been shown, however, by Schridde to present identically the same histological picture as burns caused by great heat, and accordingly fall properly within the classification.

Chemical burns are not much different from electrical-thermal burns histologically, and are treated, except for minor modifications, in the same way. As side effects, acids combine with body proteins to form acid-metaproteins, while alkalis form alkali-metaproteins; acids have the power markedly to soften connective tissue and epithelium, and alkalis the power to combine with tissue fats to form soaps; furthermore, both acids and alkalis are intensely hygroscopic, one acid, sulphuric, being able to withdraw hydrogen and oxygen from organic compounds to leave carbon only and thus give the phenomenon of charring. But from a practical point of view these peculiarities of chemical burns are of no particular significance. There is, however, one respect in which the effect, and consequently the treatment, of these lesions varies from type, and that is, that while the immediate destructive action of thermal burns ceases as soon as the burned part has had a chance to cool, the action of a chemical caustic, unless therapeutically stopped, is prolonged for a variable period of time until neutralized by the fluids coming to the tissues by way of the blood stream.

The classification of burns according to depth of penetration, though useful in a general way, is clinically often not very satisfactory, mainly for two reasons: (1) The measure of the constitutional severity of a burn is frequently not so much its depth as its location and its surface area, and (2) the measure of the local severity is the ability of the lesion to heal without impairment of function, *i. e.*, without scar formation, which, as Bancroft and Rogers, Goldblatt and others have shown, depends upon the destruction, not so much of the skin itself, as of the hair follicles

*Read before Orleans Parish Medical Society, January 23, 1928.

which dip below the skin proper. In other words, a so-called third degree burn in the usual classification will go on to extensive scar formation if it is so deep as to destroy hair follicles, but relatively complete restoration of the integument will be the rule if undestroyed hair follicles remain to provide small islands of epithelium from which epidermization may proceed. Accordingly, it has been proposed to classify burns clinically in only two degrees: (1) Those which are so superficial as to have no marked tendency to scar formation, and (2) those in which the depth of the lesion precludes such a possibility; whether such a classification is important enough to supersede the older ones remains to be seen.

ETIOLOGY.

The etiology of burns, perforce, has been already discussed in part, but with respect to age and sex incidence it is interesting to note that at least on the basis of mortality statistics taken from the figures compiled by the Metropolitan Life Insurance Company females seem to be affected more than males in the ratio of three to two, more males dying from burns from birth up to the age of three, more females from 3 to 35, males and females about equally again for a number of years, and later, in the old age period, more females than males. Perhaps this preponderance of fatal burns amongst females is not in accordance with what one might expect, but it can doubtless be explained satisfactorily in connection with the character of clothing worn, woman's duties about the kitchen and the stove, and similar considerations. More burns occur in the winter than in the summer months, rather obviously because of the necessity for more numerous and hotter fires during cold weather.

PATHOLOGY.

The local pathological histology of burns need not be repeated here; it is so classical as to constitute the type picture of inflammation, but the constitutional reaction following these lesions is too little understood, and such knowledge as we have concerning it is altogether too infrequently emphasized. It has always been appreciated, of course, that the severity of a burn may be, and frequently is, out of all proportion to the amount of tissue actually destroyed, but just why this should be has been considerable of an enigma. In the past, surgery has been content simply to dismiss the constitutional reaction with the term toxemia. Because of certain researches, however, mostly of fairly recent date the surgeon of the present has been enabled to appreciate the nature of this reaction more intimately than his predecessors. It appears from the reports of a number of investigators, notably Robertson and Boyd and Ravdin, that the burning of skin causes the local formation of a toxic product or toxic products which remain confined to the region of the lesion for a matter of eight hours or so, but, unless prevented from so doing, thereafter find their way into the blood stream, enter into or become absorbed by the red corpuscles and produce an effect some aspects of which have been pointed out, but which is not completely explained as yet. The evidence is somewhat as follows:

If the blood returning from the burned extremity of an experimental animal be diverted into the blood stream of a normal animal, the latter soon thereafter develops toxic symptoms the counterpart of those it would have manifested had it been burned itself.

If, instead of injecting whole blood, only red corpuscles are transferred from the burned animal to the normal one the reaction occurs as before, but if plasma alone is given, no reaction takes place.

If an area of burned skin from an experimental animal be removed completely and grafted onto a normal animal within 8 hours, the second animal, and not the first, develops the toxemia; if this is done, however, after the lapse of a longer interval both animals suffer.

The nature of the toxin elaborated by the burning of skin is unknown, but it has been definitely shown to be produced only when living skin is burned; the provisional assumption is made that it consists of primary and secondary proteoses, and further analysis into thermolabile and thermostable constituents had been attempted.

Organic pathology resulting from the toxemia has been sought grossly, microscopically, and chemically.

Cases of rather severe burns characteristically present the blood picture of concentration, which is most conveniently indicated and measured by the procedure of hemoglobin estimation. Underhill reports increases to 145 per cent of normal and Ravdin to 125 per cent, figures which call to mind the similar concentration observed in high intestinal obstruction, war gas poisoning, fulminating influenza, and Asiatic cholera; indeed the blood concentration may easily be the cause of death in cases of burns, the increased viscosity leading to impairment of the circulation, diminished oxygen-carrying capacity, lowering of temperature, and suspension of the vital activities. Underhill believes that this phenomenon can be explained on the basis of an outpouring of tissue fluid through the partially devitalized walls of the capillary bed in the region of the traumatism.

The gross and microscopical pathology of the various body organs has been, on the whole, rather unproductive in cases of burns. Robertson and Boyd several years ago reported that they found evidences of parenchymatous degeneration in the various abdominal organs, but Weiskotten and Greenwald and Eliasberg, reporting on human autopsies, and Olbrycht, working with experimental animals, were unable to confirm these findings. Greenwald and Eliasberg, however, working with rabbits in an attempt to find a possible explanation for an extreme hypoglycemia which they had observed in two clinical cases of burns which had died (one had no blood sugar at all, the other only 30 mg. per 100 c.c.), have described certain changes in the adrenal glands which are interesting in that they suggest diminution of adrenalin secretion as a part of the picture of burn toxemia; for the first 24 hours following experimental burns they found evidences of increased cellular activity in the adrenals of their animals accompanied by hyperglycemia, which they interpreted as being caused by excess stimulation. Olbrycht previously had found pathology of the adrenals in animals subjected to burns, consisting of hyperemia, ecchymoses, and reduction or total loss of chromaffin substance and lipoids. Hypoglycemia, if due to exhaustion of adrenal cortex, should be amenable to treatment with hypodermic injections of adrenalin, and this should be borne in mind, together with the suggestion that according to the experimental data, such therapy would be contraindicated during the first 24 hours following burn trauma.

Acidosis, it should be mentioned, is apparently no essential part of the toxemia incident to burns; the carbon-dioxide combining power of the plasma is normal. Perhaps it should also be added, at this point, that burn toxemia does not characteristically lead to a nephritis; albuminuria, though usually present, is probably only incidental to blood concentration, the kidneys being able only imperfectly to function under such conditions, though when the concentration is overcome they function again in a perfectly normal manner.

Various observers, notably Underhill and Robertson and Boyd, have reported disturbances of protein metabolism as evidenced by high non-protein nitrogen and urea blood values; the disturbance noted here is usually not particularly striking and can possibly be explained on the basis of blood concentration.

Underhill has made the very interesting contribution that blood chlorides are decreased in all but minor burns, and that

the blood chloride decrease is associated with a decrease of urinary chloride output. He goes to some length to show that this phenomenon cannot be explained on any ordinary grounds, such as diet, fever, vomiting, alkali therapy, altered renal threshold, blood concentration, or transudation at the site of burn, but rather that it is in all probability a protective phenomenon. The sodium chloride is stored in the tissues where it can be made to serve the purpose of combining with the primary toxic materials elaborated by the burned area before there has been an opportunity for the latter to produce damage. He thinks this is analogous to chloride retention in pneumonia, and makes the observation that just as in pneumonia, after the crisis, there is a large chloride elimination in the urine, just so in burns there is a readjustment of chlorides with marked urinary excretion following the separation of burn sloughs. He also quotes Hayden and Orr's observation of chloride retention in intestinal obstruction as another example of a similar mechanism.

PROGNOSIS.

As to life, considering the moderately deep burns, the prognosis is probably favorable, other things being qual, in cases where less than 1/10 of the total body surface is involved, guarded where 1/3 or more has been burned, and grave where 2/3 is affected. This is, however, only the most general sort of an estimate, burns about the head, neck and shoulders being more dangerous to life than similar ones on the extremities, children being much less resistant than adults, and much depending, in any case, upon the general bodily resistance of the patient and the institution of proper treatment.

As to scar-formation and contracture deformities, deep burns have a relatively unfavorable prognosis, but much can be accomplished by early skin-grafting, the prevention of serious infection, and other therapeutic measures.

TREATMENT.

The question of prophylactic treatment is a large one, far too ponderous for a discussion such as this, and it must be dismissed with the single suggestion that the crux is (1) education as to burn hazards, on the one hand, and (2) active protection for those constantly exposed to unusual hazards, on the other, especially those who, either due to lack of intelligence or the presence of organic lesions are particularly exposed to danger, specifically the young, the insane, and the locally or generally anesthetic.

There should be no routine treatment for burns. Rational therapy here, as elsewhere in medicine, depends upon individualization of the case, a clear understanding of the pathology present in the specific instance being the indication now for one modification and now another.

First degree burns, i. e., those characterized by erythema without vesication, if they be of no considerable extent, produce no systemic reaction of moment and, indeed, cases developing them often do not seek medical aid. For such cases as do call for treatment picric acid, either in aqueous solution or as an ointment probably best meets the indications, it being at the same time both slightly anesthetic and antiseptic.

Second degree burns and mild third degree burns, i. e., those in which scarring is not expected to be extensive, may be grouped together; according to their extent they may be mild, severe, or very severe; it must be constantly borne in mind that children bear burns poorly. The treatment should begin immediately after the patient is seen, and obviously the first indication is to prevent the further or continued action of the exciting cause. Usually in cases where clothing has caught fire resulting in a burn the flame will have been extinguished before the patient is seen, but it is not an incident of very great rarity to see patients rushed in excitement into hospitals with their clothing still smoulder-

ing. On the other hand, where chemical burns are concerned the caustic will not usually have completely ceased to act at the time the patient comes under observation; no time should be lost in preventing the possibility of further chemical destruction. Davidson has gone to some length in determining the proper procedure in the case of the acid and alkali burns, and he has come to the conclusion as the result of carefully controlled animal experimentation that dilution of these particular caustic agents with quantities of water gives decidedly better results than any immediate attempt to neutralize them, base with acid and acid with base.

Patients with extensive burns will usually be found in a greater or less degree of shock, burns about the face, neck, and shoulders being particularly prone to produce this condition. The exact mechanism of burn shock is not well understood; it is presumably caused by an overwhelmingly violent stimulation of sensory nerves, and individual idiosyncrasies are considerable, some patients being prostrated by relatively mild trauma, and vice-versa. At all events shock is easily recognized by its symptoms, sub-normal temperature, rapid, running pulse, low systolic blood-pressure, and, in the more severe cases, cold clammy skin and coma or only partial consciousness. However severe the local lesion, to attempt its active treatment with a patient in shock is to jeopardize the patient's chances of recovery by overlooking, medically, the forest for the trees. The indications here are to protect the burned area from infection and mechanical trauma by sterile dressings if possible, but clean sheets or the like will do otherwise, and get the patient immediately to some place where he can be kept warm, be provided with an abundance of fluids, by mouth, proctoclysis or hypodermoclysis, according to the needs of the case. He should be given morphin in sufficient amounts and sufficiently frequently to relieve him of his pain and keep him quiet. The treatment of the local lesion begins only when reaction from shock has definitely set in; milder cases of burns can, of course, be attacked locally without delay. The indications for local treatment are, in addition to those already mentioned, *i. e.*, protection from infection and further trauma, (1) provision for taking care of the copious exudate which may be expected from the burned area, (2) the relief of local pain, (3) the favoring of rapid granulation, and (4) whatever can be done to forestall the absorption of toxins from the burned area into the blood stream.

The clothing should be cut away, soaked away in water, or otherwise removed in such manner as will add as little trauma as possible to that already existing; gasoline is often useful in cleaning up badly contaminated areas, since it is fairly grateful to the painful lesion and at the same time somewhat antiseptic. At various times debridement has been put forward as being indicated following the preliminary toilet, as, for instance, by Brager, Lieber, and Willis; for this purpose, the patient being placed under a general anesthetic and the traumatized tissue being either cut away or completely scrubbed away; this treatment is perhaps of value in certain unusual cases, but routinely, while it meets the indications for local treatment as given above in an ideal manner, it carries with it two side effects which usually negative its more obvious advantages, (1) the first is that it adds operative shock to that of the burn, (2) the second that in extensive burns, *i. e.*, those involving considerable areas of the body, the added probability of scar-tissue formation and subsequent deformity following operative trauma probably rarely justifies the procedure.

One of the favorite older methods of treatment was to cover the lesions with gauze compresses wrung out of mild antiseptic solutions in an attempt to keep the wound sterile; this method favors exudation from the burned areas, fails to prevent the absorption of toxins, often succeeds only in providing a warm moist

nidus for the development of bacteria, more frequently still provides extra trauma by repeated dressings, and almost always fails to make the patient comfortable. The addition of novocain solution to these dressings has been advocated to control pain. As a result of the late war the method of spraying the burned area with some preparation of paraffin came to the fore; in civil life various proprietary preparations containing paraffin as a base have been used, and while they usually do succeed in making the patient ultimately comfortable often added temporarily to his discomfort by the heat used in melting the preparation, run the danger of developing a severe infection under the paraffin coating, and inevitably failed to prevent the absorption of toxins and the exudation of fluid.

In 1925 Davidson proposed the so-called "tannic acid treatment" of burns which seems to be such a distinct therapeutic advance over previous methods that any further recital of the many modifications of the above mentioned types may be omitted.

The tannic acid treatment is proposed to fulfill the indications for local treatment as indicated above in a satisfactory manner; tannic acid has only a slight and unimportant effect on the unbroken skin, but it precipitates proteins which are exposed directly to its action. Burned areas, which have become devitalized and are treated with tannic acid, are, accordingly, made the site of a coagulation process; this coagulation process or tanning prevents the spread of toxins generated in the diseased tissue and at the same time makes a coating which protects the sensitive nerve ends in the undestroyed tissues from air, and from trauma. This coating also, being impervious to moisture, prevents the extravasation of tissue fluids, which is of obvious advantage in that it does away with excess loss of tissue fluids.

In practice the tannic acid treatment consists of the application to the burned area, after removing gross contaminations, puncturing and cutting away blebs, and washing the surface gently with distilled water, of a freshly made solution of tannic acid in sterile distilled water, the recommended percentage strength varying from 0.75 per cent to 5.0 per cent, a 2.5 per cent solution being perhaps advisable in the average case. The method of application is best by means of the spray or atomizer, in which case tanning of the involved area is slightly more rapid than when undertaken in other ways. Sterile gauze compresses may be bandaged over the involved areas, these being subsequently wet with the solution by pouring the latter over them; it is simpler still to wet the compresses and apply them wet, bandaging them securely afterward. If the spray is used the aim should be to repeat the process sufficiently often to keep the surface wet with the solution, *i. e.*, every half hour, and if the wet compress method is used the compresses should be resaturated from time to time. The process of tanning should be watched, compresses being loosened and raised for the purpose every six hours, and as soon as the burned areas have assumed a uniform mahogany brown color the dressings may be removed or the spray discontinued. Complete tanning will usually take twenty-four hours or more with the compress method and sixteen hours with the spray. It should be emphasized that only fresh solutions of tannic acid should be used, for, while the dry powder keeps indefinitely, a solution of tannic acid rapidly becomes converted into the unsuitable gallic acid. To avoid trauma incident to the removal of dressings at the end of the tanning period the latter should be allowed to become thoroughly wet with the solution just prior to their removal. Subsequent to the tanning process the burned areas are left exposed to the air under a suitable tent which is covered with a sterile sheet to protect the wounds from contamination and within which are placed a number of electric light bulbs sufficient to keep the temperature within at an even

100° F. The tanned areas become gradually dry as a result of the exposure to the warm air, the interval necessary to complete the process being not less than another twenty-four hours and sometimes several times as long, depending mostly on the depth of the burn. A 5 per cent ointment of tannic acid in a base composed of equal parts of lanolin and petrolatum has been advocated in lesions situated about the eyes, ears, and similar orifices where the use of an aqueous solution on compresses may be unsuitable; with due care the spray may be used, however, in these locations and it is much superior for the purpose.

When properly tanned and dried the surface of the lesion is found to be covered by a tough, dark brown, leathery membrane which is insensitive to pain, which forms an almost ideal protection from trauma, and which seems clinically to interfere in no way with the subsequent granulation of the wound from below; in fact, the contrary represents the case more correctly because healing is usually relatively rapid and very satisfactory.

The local treatment being started, in one way or another, preferably by the method just suggested, the systemic treatment is continued. Barring shock, which is early, patients die from blood concentration, toxemia, or infection; the indications are, accordingly, (1) to force fluids early, (2) to recognize toxemia if it occurs in spite of local treatment, and treat it intelligently, and (3) to recognize the presence of infection and attempt to control it.

Fluids should be given early and in fairly large quantities; usually the patient, if not too severely burned, will co-operate by taking quantities of fluids by mouth, but otherwise proctoclysis is invoked, or even hypodermoclysis in cases where other methods do not sufficiently avail.

Toxemia, which may be expected to ensue not earlier than 8 hours after a burn and to disappear in from three to five days can be combatted *specifically* by no known method. The prophylactic use of blood transfusion in severe cases of burns should be considered early; its efficacy probably varies largely in inverse ratio to the interval elapsing before it is invoked. If Davidson is right in his contention that sodium chloride combats the toxemia by neutralizing or fixing the toxins before they have had an opportunity to exert a minimum effect, frequent chloride determinations on the blood of the patients are of the utmost importance, to be accompanied by the administration of sufficient sodium chloride to keep up a normal concentration. It must be urged that Davidson is of the opinion that the best available index of the patient's condition is to be derived by the determination of his blood chloride content. If Greenwald and Eliasberg's contention is correct that the toxin, once formed, attacks primarily the adrenal glands, first stimulating them to the excess production of adrenalin and then later damaging them to the extent that a marked reduction of the sugar level is produced, adrenalin should be supplied hypodermically after the elapse of a sufficient time to allow the initial stimulating effect of the toxemia to have passed off. At any rate the blood sugar should be estimated frequently in burn cases, since we know that in certain of them the sugar values are low, and in these the administration of glucose, with or without insulin should be of value. Frequent hemoglobin estimations are a measure of the blood concentration; the prophylactic treatment of this condition is far more easy than the overcoming of it after it is once established.

The treatment of infection is mainly prophylactic. A burn is always a potentially infected wound, and few, if any, escape pus production entirely. When pus does form, especially if paraffin or tannic acid has been used, drainage should be established by cutting away the paraffin coating or the tanned area, as the case may be; this being facilitated in the latter in-

stance by softening the membrane first with liquid petrolatum.

Deeper third degree burns. The deeper third degree burns which forbode extensive scar formation often tax the resources of the surgeon to the limit as far as the prevention of the latter complication is concerned; otherwise the treatment is both local and general as indicated for any severe burn. The thick protective membrane which results from a properly produced tanning by the method of Davidson often facilitates early skin grafting in two ways: (1) It affords a dry protective splint in which the patient can lie fairly comfortably while waiting for skin grafts to "take" on the opposite side of the body, and (2) the bed left by the removal of the membrane is particularly suitable for grafting. The early institution of movements designed to prevent contracture deformities especially in localities which are liable to fuse together is of particular importance.

CONCLUSION.

The treatment of burns is now sufficiently well developed along rational lines to stimulate the surgeon's most active interest in his burn cases; the field for research is large and the rewards for careful treatment in this field are as great as can be found anywhere.

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DISCUSSION.

Dr. Isidore Cohn (New Orleans): The first thing expected, and this time well merited, is to say that we have all enjoyed and appreciated Dr. Cutting's splendid presentation. He has brought home very forcibly to us the importance of the toxic condition due to the absorption of the burned products of the body and the principles underlying the treatment of this as brought out by Davison: first, the necessity of preventing the absorption of these autolytic products, which can be done in many ways, most of which he has called our attention to. But from a practical standpoint there are certain fundamental things we ought to keep in mind, viz:

1. To relieve pain, and by relieving pain prevent the further development of shock.

2. Maintain body fluids as far as possible. Just because patient has a burn is no reason why they should not get fluids by every possible means; proctoclysis, hypodermoclysis and even transfusion.

3. The question of preventing absorption of burned products is of fundamental importance. Tannic acid seems to do this about as well as any agent we have, because it produces local coagulation.

4. Prevent contracture. I was very much amused a few years ago by an article entitled The Orthopedic Treatment of Burns, the author having in mind the prevention of contracture. This can be prevented in the early stages by making that patient move his fingers and joints as much as possible.

Keep these things in mind and there is no reason why our patients should not do well.

Another thing he refers to are the changes which give us the impression of a definite nephritis, definite as far as the presence in the urine of albumin, casts, a certain amount of blood, etc., is concerned. This is a transient condition. Later, however, all traces of the preceding toxic nephritis disappear.

Dr. R. A. Cutting (closing): I wish to thank Dr. Cohn for his discussion and to express my regret that it was necessary to delete freely and read rapidly in order to keep the paper within the time limit pointed out by your chairman earlier in the evening.

With respect to the orthopedic treatment of contractures following burns there is in the Clinics of North America for February, 1926, a report of a series of plastic operations on a male, aged 5 years, burned while playing with matches. The report is of interest because of the seriousness of the deformity resulting from burns over the anterior neck and chest in this case, the chin being bound down to the sternum by scar tissue so dense that the chin could not be palpated through it nor could the patient close the mouth or lips nor masticate food.

INTERSTITIAL PREGNANCY UNRUPTURED:

WITH REPORT OF CASE.

H. B. ALSOBROOK, M. D.,

NEW ORLEANS.

Interstitial pregnancy refers to that type of case in which the ovum develops in that portion of the tube which passes through the wall of the uterus or in a diverticulum from that part of the tube or in an accessory tube.

HISTORY.

Several authors have given Pierre Dionis credit for being the first to describe a case of interstitial pregnancy, published in 1718. Mauriceau claimed one case before this. Schmidt (1801) is generally credited with having the first authentic case. Mayer (1825) published a treatise on this subject with four cases. Brechet reported cases in 1826.

The first cases reported by an American were by R. H. Fitz of Boston, in 1875, when he reported eighteen cases.

FREQUENCY.

The interesting features of interstitial pregnancy are its relative infrequency and its difficult diagnosis. It is the rarest of ectopic gestation with the exception of ovarian and some authorities do not believe the ovarian type exists. Pfaff believes interstitial pregnancy more frequent than is believed.

Lawson Tait, in commenting upon a post-mortem specimen, wrote: "In the enormous experiences I have had of tubal pregnancy this is my solitary experience of interstitial tubal pregnancy, but it so closely resembles a number of which I have seen in museums, that I take it to be quite typical of its class. I am, therefore, disposed to believe, from physical examination, that interstitial pregnancy could not be diagnosticated, and I can imagine no symptom which would help us to recognize it before rupture." He found only six specimens in the English Museum up to 1890.

Rosenthal reported thirteen hundred and twenty-four ectopic pregnancies before 1896, the interstitial type occurred in 3 per cent. Munro-Kerr reported one case in eighty or 1.25 per cent. Lequex reported seventy-five cases up to 1911. Levy reported twenty-six cases collected from literature from 1918 to 1925. Martin and Orhman, one in fifty-seven cases. Wynne reported fifteen hundred and forty-seven cases of ectopic pregnancy, of which 1.16 per cent were interstitial. Farrar reported three in three hundred and nine cases of ectopic. From Touro Infirmary two were reported in forty-five cases. At Charity Hospital, over a period of twelve years, three hundred twenty-seven cases, only one could be claimed as interstitial with two others as doubtful.

ETIOLOGY.

It is agreed that salpingitis-oophoritis, pelvic adhesions, infantile tubes with lack of cilia, diverticula and accessory tubes are the predisposing causes of interstitial pregnancy as well as tubal pregnancy. Mall, in one hundred seventeen cases of tubal pregnancy collected over a period of seventeen years, stressed the inflammatory changes which must have preceded the

*Read before Orleans Parish Medical Society, March 12, 1928.

lodgement of the ovum in the tube. Farrar does not believe that inflammatory changes play such an important part in causing interstitial pregnancies as in true tubal pregnancy. She stresses the mechanical obstructions, such as the uterine orifice in the tube, or an adenoma at the angle of the tube or at the junction of the tube and the uterine cavity. She also mentioned congenital malformations, as accessory tube or diverticulae. Levy suggested that possibly infantilism of the female genitalia, with a very small lumen of the tube causing the arrest of the ovum in the interstitial portion. Michinard brought out the fact that in most cases of tubal gestation the ovum is arrested some distance from the fimbriated end of the tube and as it requires some seven days for the impregnated ovum to travel through the oviduct, the ovum may develop and wedge in a narrowed part of the tube. Frankl considers the presence of diverticula of utmost importance as a cause. Donald McIntyre reports a case of interstitial pregnancy in the right side of the uterus two and one-half years after a salpingo-oophorectomy was performed on the same side for an inflammatory condition of the tube and ovary.

CLASSIFICATION.

The classification and differentiations of interstitial pregnancy have been thoroughly discussed by Weinbrauer, Kohlman and Lequex. The implantation of the ovum must be in the interstitial portion of the tube including diverticula from the tube, extending into the uterine muscle. But in view of the fact that the development of the embryo may change anatomical relations to some extent, various classifications have been proposed, but that of Klebs divides interstitial pregnancy into three groups according to the location of the imbedding site as found at operation:

1. Utero-interstitial pregnancy, when the ovum occupied the uterine end of the cornual canal.

2. Tubo-interstitial pregnancy, when the ovum occupied the tubal end of the cornual canal.

3. Interstitial pregnancy proper, when the ovum is imbedded about the middle of the cornual canal.

However, Litzenberg believes the classification of Erna Glaesmer much simpler but quite adequate:

1. The ovum develops in the fundus musculature of the uterus.

2. The development occurs in the side wall of the uterus.

3. The development occurs toward the isthmus of the tube.

PATHOLOGY.

Litzenberg, in his anatomical and histological report of a case, summarized the pathology as follows:

"Interstitial pregnancy differs from other types of ectopic gestation only as the peculiar anatomical conditions which surrounds it may modify its progress; the course and structure of the intra-mural tube leads to implantation near the posterior wall of the fundus. The structure of the tube and the uterine wall favor early rupture of the tube and late rupture of the ovum capsule otherwise interstitial pregnancy repeats most of the features of ectopic gestation elsewhere."

DIAGNOSIS

The signs and symptoms of an interstitial pregnancy are those of ectopic pregnancy. However, the pain is usually early and as Schuman states, usually develops before bleeding or death of the ovum takes place. This is due to the distention of the uterine horn, which does not distend readily. Lewers considers persistent amenorrhea a very important sign in differential diagnosis. Wynne reported amenorrhea in twelve or thirty-six of the cases, the period regular in two, irregular in twenty-two but slight in five of these. In my case the pain and bleeding appeared simultaneously. This case is the only one that I have found in the literature that had repeated chills and fever. The diagnosis before rupture depends upon vaginal ex-

amination, a fairly regular enlargement extending around one cornu of the uterus with a broad base upon the uterus and an absolute absence of a pedicle. The enlargement may be very firm from tension and give the impression of fibroid, but the history should rule out fibroid. It may be confused with one sided pelvic inflammation of the tube, or an intra-uterine pregnancy with ovarian cyst. Pregnancy in one born of a bicornuate uterus may present serious difficulty in making a differential diagnosis, also unilateral corunal abscess.

Virchow noted that the round ligament is always outside of the gestation sac. Ruge's sign, as stated by Simon, is that the distance between the insertion of the tube and the round ligament is increased and the adenexa of the affected side are higher than on the other side, owing to the increase in the size of the pregnant horn and some rotation of the uterus following this symmetrical development. A positive diagnosis of interstitial pregnancy, before operation is very unlikely, but careful history, watching and examination under an anesthetic will often clear up the diagnosis.

PROGNOSIS.

Twenty-one unruptured interstitial pregnancies out of ninety-one have been reported up to 1917, or 23 per cent. The termination is usually a sudden profuse intraperitoneal hemorrhage—this is due to the vascularity at the cornu of the uterus and as the hemorrhage is profuse, clots and adhesions do not have time to form. Beckman and Seifart believes that perforations always occur on the posterior convex surface of the gestation sac. Wynne reported eight out of twenty on the posterior surface, five on the posterior superior surface, one on the posterior lateral, three on the superior, two on the superior anterior and one on the anterior surface of the sac. The pregnancy usually terminates in two or three months and if the patient does not die of shock or hemorrhage a hematocele may develop. In the utero-interstitial type it may abort into the uterine cavity and go on to term, or a mole may form. It has been reported to develop to maturity in the broad ligament or as an abdominal pregnancy. Kupferberg reported a case in which an eight month fetus was found. Glaesmer reported a seven months. Seifart claims no interstitial pregnancies are seen after six months. Williams reported one rupture after four months. Pfaff reported one after five months — unruptured. Louis McIlroy in 1926 reported a case at term. Wynne gives the mortality as 11.0 per cent, Finisterer gives 10.4 per cent, Shink 22.2 per cent. Prior to 1893, all the cases in literature had been found at autopsy.

TREATMENT.

The treatment is always surgical, whether ruptured or not. The first operation for interstitial pregnancy was by Traub, October 15, 1893, who did supravaginal hysterectomy. Seven days later, on October 23, 1893, Lawson Tait operated on a case by incising the sac, evacuating the contents and draining. If diagnosis is made before rupture laporotomy should be performed if the condition warrants. If rupture has occurred immediate laporotomy is indicated. A great variety of operations have been done for this condition but the type of operation should be selected to fit the emergency. Supravaginal hysterectomy is usually preferred, but excision of the cornum may be done in young women if the condition warrants. The abdominal route is undoubtedly the best. Speed and team work are always to be considered. Blood transfusions, saline and glucose infusions are always in order.

CASE REPORT.

L. J., a colored female, aged 35 years, married for fourteen years and a housekeeper by occupation, was first seen September 20, 1927. At this time she was complaining of chills and fever, pain in the right side of her abdomen and loss of blood for one month. The family history was negative. She had had the usual diseases of childhood. She had had influenza in 1918, and no other serious illnesses There was no history of pelvic inflammatory disease. *Menstrual History:* Menses be-

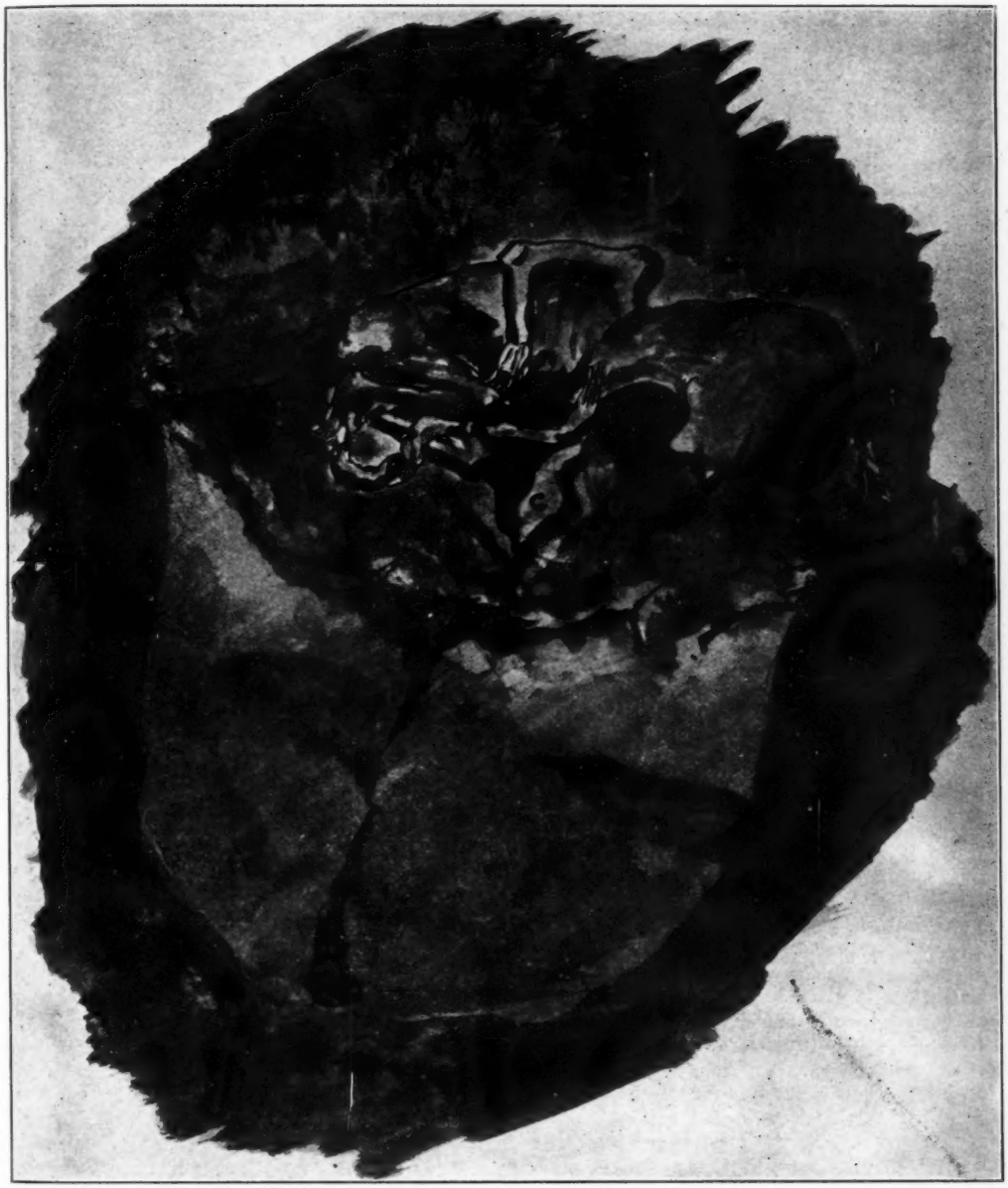

Fig. 1—Cross section. A—Sac. B—Umbilical cord. C—Endometrium. D—Uterine Cavity.

gan at the age of 11 years, regular 28-day type, lasting four to five days with a normal flow. (They were regular until May, 1927, when she skipped May, June and July.) There had been no pregnancies nor miscarriages. The last menses stopped September 10. *Present Illness:* The last menstrual period ended April, 1927. At this time she had slight morning nausea and thought she was pregnant. About the middle of August she began menstruating, which was accompanied by sharp lancinating pain in the right side of the abdomen. She passed clots and lost much blood. Ten days later she began having hard chills followed by high fever, lasting four or five days—recurring in five or six days. The patient took quinin for malaria. The last chill occurred about September 12. She was admitted to the hospital September 21.

Physical Examination: The patient was fairly well developed but poorly nourished negress, height 5 feet 4 inches, weight 100, appearing acutely ill. The temperature was 103°F, pulse 126, respiration 24, blood pressure, systolic 118, diastolic 90. The skin was warm, moist and elastic. A mass, apparently about four inches in diameter, was felt in the right lower quadrant of the abdomen, being extremely sensitive. *Vaginal Examination:* The mucous membrane was purplish. There were no vaginal secretions. The vagina admited two fingers. The cervix was soft, not dilated. The uterus was soft, about the size of a large orange. A soft mass was felt attached to and extending from the right cornu of the uterus. This was very sensitive to the touch and freely movable. The left tube and ovary were apparently normal. *Pre-operative Diagnosis:* Tubal pregnancy — infected — unruptured. *Laboratory and Pathological Reports:* September 21, 1927. Urine, catheterized, negative except few leukocytes. Wassermann negative. P.S.T. test: first hour 40, second hour 40. Blood examination showed total 18,700 white cells, differential leukocytes: Neutrophils 91 per cent, large mononuclears 6 per cent, lymphocytes 3 per cent, no malaria plasmodia found, anisocytosis, poikilocytosis and polychromtophilia. September 27, 1927. Urine catheterized, trace albumin, trace sugar, acetone positive four plus, occasional fine granular cast, slight deposit of pus, occasional red blood cell. Blood count practically same as September 21, 1927. October 3, 1927. Spinal fluid: Wassermann reaction negative, cell count 1, globulin reaction a trace.

Gross Specimen: Upon sectioning the uterus its wall was found to be markedly thickened and the endometrium was flattened. Upon opening the fluctuating mass a fetus, apparently of four months impregnation was found. It was normally formed and measured from the vertex of the skull to the tip of the spine (Minot line), 3¾ inches. The sac was found to be lying in the wall of the uterus entirely free from the uterine cavity.

Microscopic: Uterus — interstitial pregnancy with marked hyperplasia of uterine wall. Tubes —chronic salpingitis. Ovaries—healed corpus lutein cysts. Appendix—chronic appendicitis.

Progress notes: September 21, 1927. Admitted at 9:10 a.m. Walked in. Temperature 103.4°, pulse 126, respiration 24. Had chill during night. Treated symptomatically. Operation postponed. September 22, 1927. Hard chill at 6 p. m. Temperature 104°. Lancinating pains in right side of abdomen. No further complaint. Prepared for operation. Postponed. September 27, 1927. Slight chill at 8 a. m. Hard chill at 5:30 p. m. Temperature 104°. Operation postponed. Comfortable until September 29. Chilly sensation. Temperature 103°F. Complaining of slight sore throat. Throat red, no tonsillitis. Treated symptomatically. October 1, 1927. Complaining of pain in right side of abdomen. Mass apparently growing larger. October 3, 1927. Day of operation. Temperature morning of operation 101°, pulse 124, respiration 24.

Post-operative notes: Maximum temperature 99.6°, pulse 108, respiration 22. Uneventful recovery. Incision healed by primary union. No tenderness. Discharged October 13, 1927. January 15, 1928, feeling fine, gaining weight.

Pre-operative Preparation: October 2, 1927. Prepared for operation. Pre-operative sedative of luminal grs. 2 at 8:45 p. m. October 3, 1927. Pantopone, grs. 1/3 at 6:45 a. m. Morphin sulphate, grs. 1/6 and atropin sulphate, grs. 1/150 at 7:15 a. m. Adrenalin chloride 1/1000 mms. 15, at 8:15 a. m.

Operative Procedure: In a sitting position the skin of the back was prepared with benzin-iodin and iodin. One and one-half grains of apothesine in three centimeters of normal saline was injected between the first and second lumbar vertebrae. In the Trendeleberg position the skin was prepared as before. The abdomen was opened through a midline incision, five inches long, between the umbilicus and symphysis pubis. The upper abdomen was packed off and Balfore retractors placed. No free fluid was found in the abdomen. The uterus and tumor mass was free from adhesions and was drawn into the incision. The uterus was soft, the size of a large orange and extending from the right cornu was a mass about 3 inches long by 2½ inches wide. The right tube was stretched over the mass but the round ligament was anterior and inferior to the mass but higher than the one on left. The blood vessels were dilated and markedly congested. The mass was of a blu-

Fig. 2—1—Membranes. 2—Umbilical cord. 3—Fallopian tube. 4—Endometrium.

ish color, soft and evidently contained fluid. Considering the patient's age, a supravaginal hysterectomy was done, including both tubes and ovaries. The round ligaments were sutured to the stump of the cervix and a nice peritoneal toilet was accomplished. The appendix was free, about two inches long, pale, evidently in stage of chronic inflammation. It was removed with double ligature of chromic catgut No. 3 and cautery. The abdomen was closed in tiers with single No. 3 chromic. Silk worm was used for retention sutures and dermal for the skin. Analgesia was complete and there was no nausea.

CONCLUSIONS.

1. Infection or mechanical alteration in the interstitial portion of the tube predispose to interstitial pregnancy.

2. Early diagnosis and immediate laparotomy are imperative.

3. Supra-vaginal hysterectomy is the operation of choice.

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DISCUSSION.

Dr. H. W. Kostmayer (New Orleans): The pleasure that I took in accepting Dr. Alsobrook's invitation to open the discussion was somewhat lessened by the reminder that it has been a great many years (too many years) since my first paper before the Society, which was on this very subject—a case of extra-uterine pregnancy. It is evident, from this fact, that from the beginning I have been keenly interested in this subject with its many variations.

The topic is interesting for two pronounced reasons: one is the phenomenon of the ovum being able to develop outside of its normal habitat; the other is the extreme difficulty of diagnosis. It always seems to me a marvelous thing that an ovum, impregnated, intended to lodge in the uterus should take up its residence elsewhere and continue to develop and even go to term (as in the cases of interstitial and abdominal pregnancy that do) and find a way of nourishing itself, attaching itself to anything for blood supply and continuing, as I say, to full term. On the other hand, the diagnosis of extra-uterine pregnancy in any form is extremely difficult, so much so that we check ourselves in the service to ascertain how often our interpretations are correct, or the reverse obtains. We have a case come in with a typical history—missed menses, pain in one or

the other side of the abdomen, mass in one or the other side,—and put down a diagnosis of 100 per cent extra-uterine pregnancy, and find an ovarian cyst. This happened to us just last week. Then again we have opened an abdomen without suspecting this condition, to find a ruptured extra-uterine pregnancy in which the bleeding had ceased. The diagnosis of interstitial pregnancy (by which is meant separating it from other types of ectopic gestation) is largely a matter of guess work. I would not assume that I could differentiate in these cases and state that an extra-uterine pregnancy was interstitial. It has been my misfortune to handle one case, the only one reported from Charity Hospital. This went to table as a diagnosis of extra-uterine without a thought of it being an interstitial pregnancy.

I want to say that I enjoyed Dr. Alsobrook's paper and his resume of this subject which makes it such a worth while study in that it brings to us all of the knowledge of the literature up to date.

Dr. H. R. Unsworth (New Orleans): It is of interest that spinal anesthesia was used in this case. I do not remember hearing any particular indication as to why this method was used, but I feel it is to be regarded with a great deal of respect, and unless there are very definite indications for its employment I feel that it is not an anesthetic of choice. I should like to ask Dr. Alsobrook if there were any unusual post-operative complications of bladder or rectum that he could in any way attribute to spinal anesthesia.

Dr. Abe Mattes (New Orleans): The employment of spinal anesthesia in ectopic pregnancy is the method of choice in quite a number of cases that would not withstand some other procedure and at times the decided factor that makes for the well being and recovery of that patient after operation.

Regarding the serious consequences that may follow its use in ectopic gestation, the danger is no greater than in other operations. I think spinal analgesia can be used with perfect safety, irrespective of whether the patient is suffering from ectopic pregnancy or from any of the other operative conditions we encounter.

Dr. H. B. Alsobrook (closing): In reply to Dr. Unsworth regarding the use of spinal anesthesia in this case. In the first place she was a poor surgical risk, having bled continuously for one month before she came in. Secondly, she had a slight respiratory affection at the time of admission and fearing that inhalation anesthesia might cause a recurrence of the condition, we considered spinal the anesthetic of choice. There was also some blood disturbance. As for paralytic ileus, I have only seen one case in the past three years in spinal anesthesia. My patient had no laxative other than milk of magnesia on the third day and voided voluntarily after eight hours. The maximum temperature was 99.6°, the pulse 124 on the evening of the operation.

I wish to thank Drs. Kostmayer and Mattes for their discussions.

TREATMENT OF ACNE.

T. A. MAXWELL, M. D.,

NEW ORLEANS.

In considering the treatment of any disease one is forced to realize that one agent, no matter how skillfully employed, is not able to meet and eradicate all conditions which may arise. Without dividing acne conditions into their respective groups, I will attempt in this short paper to cover the practical treatment of this disorder in a general way.

In the cases which give just the ordinary comedones with little or no signs of inflammation I believe that the roentgen-ray given in doses of one quarter skin unit once a week is sufficient. In explanation of this point it should be said that as soon as the lesions are retrogressive, by this I mean that the inflammation has subsided and no new sign of inflammation is occurring, is time to stop treatment with the roentgen-ray even if just three doses of one-quarter skin units have been used. Then the skin should be watched for a recurrence when further roentgenotherapy may be used. I believe in this way the smallest amount of roentgen-ray can be used and the best results attained.

Another way to judge the results of treatment is by making use of the comedone extractor upon patients presenting themselves for treatment. There can be extracted one or more comedones approximating the length of the sebacous plug. After giving several treatments again extract some of the plugs and it will be

found that the length is much shorter, proving, as I believe, the capacity and function of the glands has been cut down; which after all is the cause of the condition, the hyper-activity of the pilo-sebacous glands.

In cases of pustular acne in which there are signs of secondary infection, I advise the use of roentgen-rays for two reasons: one that the activity of the glands being decreased and the amount of blood to these parts being diminished, the infection becomes less, the pustules dry up and healing takes place, the crust being thrown off with very little scar resulting. In the second place, the pus from the pustules left in situ being absorbed, acts as an autovaccine for the patient. Pustules of larger caliber should be opened by the cataract knife and drained because they will cause necrosis of the skin and leave large unsightly scars.

Again in these cases I find it very successful to have the patient use a mask of several layers of gauze soaked in saturated solution of boracic acid, applied to the entire face for about four hours a day. This solution will take care of the miliary pustules which in some instances continually recur. As far as the scars are concerned, especially those which take on a keloid character, roentgen-therapy makes them much smaller and the results are very gratifying. Naturally those deep scars which resemble the scars of small-pox can never be eradicated and are there to stay.

Diet has little affect on the treatment either one way or the other. I allow my patients to partake of sweets freely or any other food which is claimed by others to affect the treatment and I have observed no difference in results.

I do not believe that the general constitutional treatment plays a part in the treatment. All cases have their basic cause in the hyper-function of the pilo-sebacous glands and the eradication of this condition produces the results. I have many times seen severe cases of acne in the healthiest individuals.

The patients that complain of very few lesions on the face but extreme oiliness of the skin I take to be due to the hyper-function of the sebacous glands; the roentgen-ray is most useful. The giving of one-quarter of a skin unit once a week for two or three doses will relieve this condition for as much as eight months or more. When recurrence takes place another treatment or two is all that is necessary. This method will take care of the oiliness and at the same time will give us a large margin of safety as far as dosage is concerned. It does not cut down the oil too much, the result of which would be a parchment like skin, subject to any and all irritation.

Before closing I wish to call attention to what I consider the most important phase in the treatment of acne. The scalp should be cleared of dandruff because these seborrheic scales fall on the face, irritate the mouth of the pilo-sebacous glands, causing an infection and necessarily a virtual closing of the lesions. With the stoppage of drainage and blocking of the secretions there is started a papule of acne, plus skin erythema, and the pustules then begin. I have entirely cleared up several cases of acne by merely keeping the scalp clean.

In treating acne I would like to have one statement stand out very prominently: Clear the scalp in all cases; I have never seen a case of acne without dandruff.

REVIEWS

SURGERY OF THE RETICULO-ENDOTHELIAL SYSTEM.†

ISIDORE COHN, M. D.,*

NEW ORLEANS.

The subject under consideration emphasizes the need for closer co-operation between internist and surgeon, and the necessity for co-ordination of their clinical experience with the advancing knowledge gained by physiologists in their conquest of the fields of mystery.

The reticulo-endothelial system, so named by Aschoff, consists of certain connective tissue cells both fixed and wandering found in the liver, (Kupffer cells), spleen, lymphatic system, bone marrow and the vascular net work of the omentum and mesenteries.

Aschoff does not consider these cells of hematogenous origin. They are the great phagocytes of the body. "The reticulo-endothelial system must be considered the means of control of the cellular elements of the blood." (Krumbharr.) The site of their greatest activity is in the spleen.

Surgery of this system resolves itself almost entirely into surgery of the spleen. As a corollary to this, surgery of the spleen, when there is disease of the reticulo-endothelial system, will be successful in proportion as it is advised and utilized in cases where the greatest disturbance of the reticulo-endothelial system is in the spleen itself. Therefore, careful selection of cases should be made by proper elimination of those diseases from the category of surgery where the pathology is equally distributed to other organs forming the system.

Galen, many centuries ago, called the spleen the organ "full of mystery." Today this is appreciated probably more than it was in Galen's time.

†This is the third of three papers from a symposium on the Reticulo-Endothelial System, presented at a meeting of the Orleans Parish Medical Society, March 26, 1928. The discussions of the evening follow this paper.

Dr. W. J. Mayo cites the following story:

"A senior medical student, up for his final examination, was asked by the professor of physiology, 'What is the function of the spleen?' After considerable hesitation and digital irritation of the scalp, he replied that he had known but had forgotten. 'What a pity,' said the professor, 'for you are the only man who has ever known.' "

The following are some of the functions of the spleen as one understands them today:

1. Destruction of effete red cells.

2. The fragility of the red cells is increased in certain pathologic conditions associated with splenomegaly.

3. It acts as a scavenger for blood cells, and bacteria as a step in the formation of pigment.

4. It prepares bilirubin from the broken down hemoglobin. It is found that the splenic vein, as a result of red cell destruction, contains more bile pigment than the splenic artery.

5. It stores iron.

6. It destroys platelets.

7. Thrombo-plastic substances, which have to do with coagulation, are formed as the result of platelet destruction.

8. The spleen acts as a filter.

The purpose of this paper will be to give supportive arguments for surgical intervention in certain diseases of the reticulo-endothelial reason.

In order to do this it will be necessary to discuss indications as pointed out by physiology and pathology.

The technic involved in doing a splenectomy will not be particularly considered as the method of procedure has been established.

It may be asked what changes may be expected to follow splenectomy.

Splenectomy for a pathologic condition is followed by:

1. A rise in red cell count.

2. An increased resistance of the red cells to hypotonic salt solution.

3. A lessened tendency to jaundice.

4. Spontaneous hemorrhages are rare after splenectomy for pathologic conditions.

5. There is an increase in the platelet count.

6. There is a return to the normal bleeding time, probably due to the increase in reticulated cells in the circulating blood.

7. The blood clot becomes retractile.

8. There is a proliferation of the endothelial cells in lymph glands and in the liver, and a reddening of the bone marrow.

9. Following splenectomy there is less blood in the portal circulation.

Another question which naturally arises is: In which cases are we led to expect beneficial results from splenectomy?

Lest we become too enthusiastic in our approach to the problem of surgery where splenomegaly exists we must recognize the fact that the operation will be beneficial directly as the spleen is the seat of the greatest disturbance in the disease causing the anemia. This is not a new thought, simply a reiteration of an old warning.

I hope to develop this thought.

ANATOMY.

The blood supply to the spleen and the disposal of its venous blood is of particular interest and consideration of it offers room for some speculation with reference to the association of diseases of the liver and spleen.

The splenic artery is a branch of the cealiac axis, the other branches being the gastric and hepatic. The splenic vein with the mesenteric forms the portal vein. Thus we see that the spleen and liver receive their blood supply at the same source, a wandering cell or organism has an equal chance to reach both organs. By means of the venous channels the liver receives the spleen's refuse products.

As a drainage problem one would expect to find hepatic disturbances benefitted by diminishing the amount of blood which passes through it. This is what happens following splenectomy in portal cirrhosis.

Wilkie mentions the fact that a branch of the phrenic nerve is supplied to the spleen, which accounts for pain in the left shoulder in splenic disease.

In considering diseases of the reticulo-endothelial system one must of necessity consider those conditions in which it is suddenly called upon for emergency work.

In some instances something must be done to take care of the situation when the reticulo-endothelial system is over stimulated. In other words, give time for the system to mobolize reserve forces and to bring the same to the front for the defense of the patient.

Such conditions are represented by the acute anemias due to hemorrhage and septicemia.

In hemorrhage the sudden loss of blood should be replaced while the blood making organs have the opportunity of reproducing that which has been lost.

In septicemia, since the reticulo-endothelial system is the great defensive mechanism, and since the great phagocytising mechanism is taxed to the limit of its capacity, over stimulation may result in exhaustion and the patient overwhelmed by the invading organism.

Supplying whole blood temporarily adds the needed elements and at the same time provides a natural stimulation to the reticulo-endothelial system.

Hemorrhage and septicemia. These conditions cannot be considered without mentioning transfusion. Whole blood should be the method of election in all cases.

Splenectomy has given spectacular results in two of the diseases of the reticuloendothelial system—hemolytic jaundice and thrombocytoylic purpura.

Splenomegalies in association with splenic anemia and the Banti syndrome, cirrhosis of the liver, Gaucher's disease, and Von Jaksch's anemia have found a place in the category of diseases in which benefit may be expected in selected cases from splenectomy.

Pernicious anemia and the leukemias will be briefly discussed.

In presenting this subject from a surgical standpoint it is pardonable to give briefly the clinical manifestations which justify the surgeon in operating. This observation is made because it should be the conviction of the surgeon that an operation of such magnitude should not be performed merely at the request of his medical confreres. The surgeon should be capable of making his own diagnosis.

HEMOLYTIC JAUNDICE.

This disease is characterized by splenomegaly, jaundice, the presence of coloring matter in the stools, and the absence of bile pigment in the urine.

Examination of the blood reveals diagnostic characteristics. We find increased fragility of the red cells, and an anemia which at times becomes so great that it almost presents a picture of pernicious anemia.

According to Whipple "the excessive red cell destruction results in an amount of bile pigmentation beyond the ability of the liver to excrete and a jaundice results."(2)

What is to be expected of surgery in this disease?

We know that splenectomy is followed by an increased resistance of the red cells to destruction, therefore there will be less opportunity for the formation of bile pigments, hence there should be less jaundice.

Since these things are facts splenectomy should be a specific antidote for a disease in which the hypersplenism is associated with destruction of the red cells, increased pigment formation and increased fragility of the red cells.

The operation of splenectomy for hemolytic jaundice was first performed by Micheli in 1903. The first reported splenectomy was by Banti, 1912.

That the results obtained justify the means is proven by the statistics of Giffen. In November, 1927, he reported 81 cases with a hospital mortality of 4.93 per cent. Of the 68 living at the present time, 63 are in good health.

All authorities have agreed that the diagnosis once made indicates splenectomy after proper pre-operative preparation of the patient. As proof of this I will cite Whipple: "In this disease as in no other splenopathy splenectomy gives a brilliant immediate as well as permanently a curative result."

Giffen states that the importance of the diagnosis is now so well understood and the value of splenectomy so generally recognized that it is not necessary to elaborate on them.

THROMBOCYTOLYTIC PURPURA.

This disease has attracted a great deal of attention during the last few years, particularly since the work of Brill and Rosenthal in our country in 1923, and the work of Katznelson and Franck, as well as others in foreign fields.

The disease is characterized by varying degrees of splenic enlargement, hemorrhages from the mucous membranes, and under the skin, marked anemia, prolonged bleeding time, normal coagulation time, a non-retractile clot, and diminution in the platelets in circulating blood.

This disease is one of the apparently proven conditions associated with disturbance of the reticulo-endothelial system. The platelets are formed in normal numbers, evidencing the fact that there is no disturbance in the megakarocytes of the bone marrow from which platelets are formed. The hyperactivity of the spleen and other members of the reticulo-endothelial cells destroys the platelets as fast as they are formed. Since we know that platelets are the only formed elements which have to do with coagulation of the blood, their destruction interferes with the formation of a retractile clot. The efficiency of splenectomy in this disease is one of the specific arguments of the value of surgery in those cases where the diagnosis is justified.

Failure to cure a case of purpura by splenectomy may be attributable to operation done on a case in which either the patient has not a true thrombocytolytic purpura or as Whipple cautioned "where the major part of the thrombocytolysis has not taken place in the spleen."

Too much stress cannot be laid on the importance of an accurate diagnosis. Platelet counting requires careful technic. A special method of accomplishing this was developed by Dr. R. T. Liles while we were doing some experimental work on this subject several years ago. His methods have been published in the Journal of Experimental Biology and Medicine.

All are agreed that the diagnosis indicates surgical interference after transfusions have temporarily restored the blood balance.

SPLENIC ANEMIA—BANTI'S DISEASE.

This disease is characterized by splenomegaly, weakness, progressive secondary anemia, low color index and leukopenia. In the latter stages the liver is enlarged and there is an associated ascites.

The red cells retain their normal shape, "Nucleated forms are rarely seen," (Pool), and the fragility of the red cells is not increased. The coagulation and bleeding time are normal, and the platelet count is not disturbed.

Jaundice is rare. At times there are hemorrhages. Pool states that you may have "purpura epistaxis, hematemesis, melena, hematuria, and uterine hemorrhages. The most severe hemorrhages come from the uterine and occasionally prove fatal."[3] The etiology of this disease is unknown.

Many theories have been advanced by writers and one which I have quoted before seems to offer the most rational explanation. (Hanrahan.)

"1. In any consideration of the general question of anemia one is confronted with the absence of any proved and accepted explanation of the mechanism of the blood balance in the body."

"2. We accept that there is a continuous activity of a widely distributed hematopietic tissue which in health is exactly balanced by a hematocatatonistic function."

"3. It is obvious that an uncompensated disturbance in either of these balanced forces will produce the clinical manifestations recognized as anemia or poly cythemia."

"4. The conception of a reticulo-endothelial cell apparatus attempts to provide an organ or system for this function."

"5. The presence of splenomegaly points to some involvement of the spleen and early led to splenectomy on purely empiric grounds." (Hanarahan.)[4]

Whipple believes that "the good results following splenectomy in the early stages of the disease favor the view that the primary cause is in the spleen and these good results are shown not only in an improvement in the anemia, but an arrest of the degenerative changes in the liver, and the portal obstruction."

Even though the disease is not primarily in the spleen the good results may be due,

as is believed by Dr. W. J. Mayo, by removing an agent of destruction and by so doing the essential causes of the disease is rendered ineffective.

In the past splenectomy has been advocated particularly in cases before the development of ascites. Within recent years Sweetser has advocated operation in the late stage in order to relieve the portal system and thus diminish the work on the liver and effectively decrease the ascites.

Causes of death following splenectomy in Banti's disease:

Wilkie says that death follows splenectomy in some cases as a result of mesenteric thrombosis. Cases of Banti's disease may have either a high or low platelet count. Those with low platelet count respond well, those with high platelet count "show a tendency to thrombosis following splenectomy." (Howell Evans.)

Consideration of the results of splenectomy, in those cases of the Banti syndrome associated with ascites, has directed attention to the possible value of splenectomy in cirrhosis of the liver. It is easy to understand that in some cases where the spleen and liver are enlarged difficulty arises when an effort is made to determine which enlargement occurred first, the liver or the spleen.

On the above basis splenectomy has been done in a few cases of cirrhosis of the liver with benefit.

VON JAKSCH'S ANEMIA.

"Von Jaksch's anemia is a condition occurring in children and marked by anemia, slight enlargement of the liver, and marked enlargement of the spleen and sometimes an enlargement of the superficial lymphnodes. The blood picture is characterized by a well-marked diminution in the number of the red cells and the hemoglobin and a persistent leukocytosis of varying degree."

"*Pathology.*—There is anemia of the organs, often associated with more or less fatty degeneration. There may be petechiae and in some instances there have been described hydropic collections in the body cavities. The lymph nodes are apt to be enlarged and cherry red, the so-called hemolymphnodes. The bone marrow is dark bluish red and hyperplastic—of the myeloblastic type. Films made from these organs reveal the presence of nucleated red cells. The spleen is very large and varies in color."

"*Symptoms.*—Pallor, weakness, and dyspnoea are early symptoms. True jaundice does not occur. The enlargement of the spleen appears early in the disease and may reach an extreme degree. The examination of the blood must determine the diagnosis."

"The hemoglobin may be as low as 20 per cent and the red cells down to 1,000,000. The color index is usually less than 1.0."

"The erythrocytes show an extreme departure from the normal. Megaloblasts and normoblasts are often seen.'"

"Leukocytosis is an important element in the blood picture. It may be as low as 10,000 and may reach 50,000. The differential count shows nothing remarkable. The fragility of the red cells is normal as a rule." (Pool.)

Under the head of treatment of this disease Pool makes the statement that "In no instance is it reported that the patient suffered harm as a result of splenectomy, so that every patient with von Jaksch's anemia who fails to improve with other treatment is entitled to this operation."

Considering the pathology as given above by Pool the splenic enlargement, hepatic, lymph node enlargement, as well as evidence of hyperactivity of the bone marrow seem to suggest that the entire reticuloendothelial system is disturbed and therefore only conservative estimate of the value of surgery in this disease should be made.

GAUCHER'S DISEASE.

Gaucher's disease was first described by Phillipe Gaucher in 1882. He considered it a primary epithelioma of the spleen.

This disease is characterized by "progressive increasing enlargement of the spleen, a similar though later enlargement of the liver, by a brownish discoloration or pigmentation of the skin, chiefly of the face, neck and hands, by peculiar changes in the occular conjunctiva giving rise to cuneiform thickenings extending from the corneal margins to the inner and outer canthi. It is later accompanied by an anemia of the chlorotic type. Hemorrhages occur frequently from the mucous surfaces, and occasionally in the skin. The blood, even in the early stages, shows a persistent leukopenia, which attends the disease throughout its entire course; the erythrocytes, however, are not altered in shape, size or number, nor is there a hemoglobinemia, until the disease has lasted a few years. Even then the anemia does not become very pronounced. The disease is a particularly chronic one, often of many years' duration. Jaundice is not present and ascites is a very rare accompaniment."

"*Pathology.*—The distinctive feature of the disease is the presence in the spleen, liver, lymph-nodes and bone marrow of peculiar, large cells with a characteristic type of cytoplasm."

"*Bone Marrow.*—The consistency of the bone-marrow is soft and the color is always red, but small white or yellowish areas are frequently seen. The large characteristic cells described in the spleen, liver and lymph-nodes are found here in abundance."(5)

In regard to the treatment there is no general agreement.

Whipple advocates splenectomy with the caution that brilliant results must not be anticipated because extensive distribution of the disease at a distance from the spleen may later appear.

Wilkie cites Guillott's record of 14 cases which had been splenectomized with only 3 deaths. In the remaining 11 the results were extremely satisfactory.

Brill and Mandelbaum on the other hand state that "at the present there is no agent which can be depended upon to arrest the disease." "The writer fails to see how such a measure (splenectomy) can control the course of a disease which is not confined to the spleen but which seems to invade almost simultaneously all the components of the hematopoietic system. To remove the disease it would be just as necessary to remove the lymph-nodes and the bone marrow from the body as the spleen, which of course cannot be done."

A middle ground may be taken. If the spleen seems to be the greatest offender and by its enormous size is giving trouble it should be removed. It must be remembered in a disease which is so widespread that little should be expected of surgery.

Diagnosis is of paramount importance. Splenomegaly must not be assumed to be an indication for splenectomy. In no other disease unless it be leukemia is the question of justification for surgery so definite.

In Gaucher's disease, like in leukemia, the justification for surgery must be proven before it is undertaken.

Time and patient research for the cause of Gaucher's disease will finally dictate the proper treatment.

PERNICIOUS ANEMIA.

This has been a battleground between surgery and medicine for several years.

Until the work of Minot and his associates was published a few years ago repeated transfusions and splenectomy seemed to offer the greatest hope. There are still some who believe that the operation is being neglected now more than is justified.

Before a conclusion is reached, that it should never be done, it certainly will be well for all concerned to appreciate the fact that splenectomy may still find its place in some cases where other methods of treatment are used in connection. Such a belief was expressed by Giffen, Novem-

ber, 1927, when he stated: "It is, however, not impossible that a splenectomy combined with other methods of treatment may eventually have a more significant place in the management of pernicious anemia."(6)

The etiology of this disease is unknown. It is characterized by marked anemia, high color index, progressive weakness, gastro-intestinal manifestations, and lesions in the spinal cord.

I believe that certain of these cases after repeated transfusions and the Minot diet may, with some degree of propriety, be operated and beneficial results be obtained. Until the etiologic factors are determined we will still be in the dark as to the proper method of approach.

LEUKEMIA.

One might almost dispose of this subject from a surgical standpoint by quoting Charles L. Green when he says: "It is contraindicated absolutely."

The attitude that surgery is contraindicated can be easily appreciated when one understands that there is almost a universal glandular enlargement.

In order to cure not only will it be necessary to remove the spleen, but the entire reticulo-endothelial system. This, of course, is impossible.

In this disease we must look to the roentgen-ray, radium, benzol, or possibly some therapy which is not yet outlined.

Before closing I should like to call attention again to a phenomenon which occurs in some cases following splenectomy; a reaction which is similar to that of capillary poison such as histamin. This reaction forces one to the conclusion that in doing a splenectomy an over-dose of capillary poisoning may be instantly liberated.

Comparison with Dale's work on capillary poisoning should throw some light on this suggestion.

The practical application, that I believe is essential, is that there should be as little manipulation of the spleen as possible because it may liberate an excess of the capillary poison and thus produce a reaction.

CONCLUSION.

1. Co-operation between internist, physiologist, and surgeon is of paramount importance in diseases of the reticulo-endothelial system.

2. Continued research for the etiologic factors in order to properly catalogue these diseases is important.

3. Since the reticulo-endothelial system is the mechanism for blood balance, we must be reasonably sure that the spleen is the greatest disturbing factor before undertaking surgery.

4. Transfusion in hemorrhage and septicemia is rational because of the acute disturbance of the reticulo-endothelial system which is present in these conditions.

5. Splenectomy is followed by brilliant results in hemolytic jaundice and thrombocytolic purpura.

6. Splenic anemia is greatly benefitted by splenectomy.

7. Gaucher's disease, von Jaksch's anemia, and pernicious anemia are not entirely dependent on surgery for beneficial results.

8. Leukemia is not a surgical disease.

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DISCUSSION.

Dr. J. H. Musser (New Orleans): It seems to me that this whole subject has been so thoroughly discussed and so many facts brought out that it is hardly worth while for me to attempt more in the way of discussion. Dr. Duval brought up some interesting points of a controversial character which might be answered in closing by Dr. Laurens.

One disease I might mention, not mentioned tonight, which it seems is outstanding evidence of disease of the reticulo-endothelial system, and that is infectious mononeucliosis, which is primarily a disease of this interesting system.

In conjunction with remarks that were made from the surgical standpoint, I would emphasize one particular idea, that is: despite the enthusiasm in the study of a definite condition and our enthusiasm for the remedial measures which sometimes help in certain types of cases, follow Dr. Cohn's suggestion that we do not become overenthusiastic. Because the spleen is responsible at times for diseases of certain types does not follow that all types of blood disease would require splenectomy.

Dr. Pigford took up very thoroughly indeed the various diseases which play a part in the disturbance of the physiology of this reticulo-endothelial system.

Splenectomy is followed invariably by an enlargement of the so-called hemolymph nodes and in experiments with animals they develop with remarkable rapidity, explaining in part why so often after the spleen is removed the anticipated result is rather short-lived. I have had the opportunity of following up four or five individuals who were splenectomized a few years ago, and I always hoped that I would have the opportunity of examining these individuals post-mortem. Thus far none of them have died and it may be that I will never have this chance. But I would like to call the attention of those surgeons who have performed this operation some years back to keep in touch with their patients and in the event of death to get an autopsy, if possible, and study carefully the results.

Dr. E. D. Fenner (New Orleans): We hear before this Society practical papers that tell us the experience of the writers, and we have, sometimes, papers of the type we have listened to tonight, for which I think we should be grateful. Looking around this audience, I take it that many are like myself, and feel that much that we have heard is still a little above our heads, and that we are looking up and out at an aeronautic expansion of the present horizon of medicine. But these papers, while most of us do not yet know a great deal about the problems they present, have given us something to think about. And thinking is always good for us.

I have but one word more to add. The highly technical character of these discussions recalls to my mind a negro maid, who worked for years in my mother's household, whom I heard speaking to the cook about my brother. She said: "I certainly do like to listen to Mars Charlie converse; he does talk such high dictionary."

Dr. Russell Pigford (closing): I should like to call attention to the apparent geographical distribution of polycythemia vera. It is very rarely seen in tropical and sub-tropical regions, while the greatest incidence seems to be in the cooler climates. The greatest number of case reports have been from the northern and eastern parts of this country and the northern countries of Europe. That it does occur in sub-tropical climates, however, is evidenced by the report of a case occurring recently in the service of Dr. Musser at Charity Hospital.

Dr. Henry Laurens (closing): In the analysis of this interesting system one of the chief difficulties we encounter is correlating what happens in health and what happens in disease. In this connection I am reminded of a remark that "It is in her moments of abnormality that Nature reveals the secrets of her laws." I think, however, that Professor Duval is a little too broad in his concept of the reticulo-endothelial system. In the embryo the general endothelial bed is highly phagocytic. It has been shown, however, in a recent paper (Beard, J. W., and L. A. Beard. Amer. Jour. Anat., 40:295-314, 1927) that as the embryo develops the phagocytic capacity of certain portions of the endothelium increases, while at the same time that of other vascular endothelium diminishes. The portions which show the increase (the "specific endothelia") are those I have outlined as being included in the reticulo-endothelial system. Aschoff concedes that the perivascular cells of the kidneys and adrenals and reticular cells of the pancreas belong to this system in the broader sense of the term. If included at all, the interstitial cells of the testis and the reticulum cells of the thymus would represent only an accessory branch of the reticulo-endothelial system. According to Aschoff, only the special-

ized endothelium of the liver, spleen, bone marrow, lymph nodes, adrenal and hypophyseal capillaries belong to the reticulo-endothelial system, the vascular endothelium elsewhere being unable to produce mobile phagocytes.

In answer to Dr. Fossier's request for information about this recent work dealing with the lungs as a blood-forming gland, I am afraid that I can not be of service. The function of the alveolar phagocytes is an interesting question. The alveoli, however, are lined with epithelium, and not endothelium, and that, I think, throws this particular portion of the organism out of our present consideration. It has been shown a number of times that these cells are highly phagocytic and ameboid and behave like histiocytes.

CASE REPORTS AND CLINICAL SUGGESTIONS

GANGRENOUS APPENDICITIS OCCURRING SIMULTANEOUSLY WITH SCARLET FEVER.

J. M. BODENHEIMER, M. D.,
AND
T. J. FLEMING, M. D.,
SHREVEPORT, LA.

To quote Woody(1) "The combination or concomitant infections are not limited to two, triple infections are not uncommon and quadruple are not unknown. In fact their number may be as many as the infections to which a given individual has been exposed, though they do not necessarily all appear during the acute stage of one or the other disease."

"We have seen scarlet fever combined with varicella and whooping cough, with diphtheria, measles and epidemic cerebro-spinal meningitis, also scarlet fever, diphtheria, varicella and whooping cough, with recovery."

Scarlet fever as a surgical wound infection is not unknown, but nowhere have we been able to find reported a case of gangrenous appendicitis concurrent with scarlet fever.

A High School boy, sixteen years of age, was brought to our office to be treated for a severe case of acne of face and back. Upon examination, a scarlet fever rash was observed upon chest, abdomen and inner surface of thighs. Temperature 102° F., pulse 100. Throat and tongue were characteristic. The diagnosis of scarlet fever was confirmed by Dr. M. S. Picard.

The following morning the patient's general condition was splendid with eruption and strawberry tongue more marked. Temperature 99.5°, pulse 90. About noon he was suddenly seized with pain in epigastrium following the ingestion of a banana. His mother administered the usual household remedies including Epsom salts, which he fortunately vomited, and securing no relief, one of us was called.

(1)—Tice, Practice of Medicine.

After the customary lecture on the promiscuous use of purgatives in "stomach ache," tincture of opium, five minims every two hours for the relief of pain was prescribed. The following morning the mother reported that the boy had continued to vomit and that the pain was even more severe than before. He was now suffering with cramping over the entire abdomen and with watery stool every five minutes. There was no definitely localized point of tenderness, and no muscular rigidity, although he did complain of some soreness upon palpation. At 6 p. m., 30 hours after the initial attack of pain in the epigastrium, there was a well localized point of tenderness in the neighborhood of McBurney's point. Temperature 102°, pulse 110. At 9 p. m. temperature 103.5°, pulse 120. Blood report by Dr. C. E. Hammer, was as follows: Total white count, 8,500, with 78 per cent of polymonphonuclears.

In spite of the fact that he had been suddenly relieved of pain, or rather because of that symptom, togther with climbing temperature and pulse, we made a gridiron incision directly over the point of greatest tenderness and delivered a large gangrenous appendix enfolded in the omentum, which ruptured, exuding very foul smelling pus.

We simply tied off the appendix, cauterizing the stump and draining with a cigarette drain.

The patient made an uneventful recovery, the healing being in no way impaired by the scarlet fever. There were several problems that presented themselves to us in this case. The first was: what would be the results of an operation on a case of scarlet fever? Second: how would the disease effect the healing? Our results in this case were not influenced in the slightest by the scarlet fever.

We were confronted with practically a normal blood count where either condition should give a leukocytosis with marked increase in polymonphonuclears. In this case the gangrenous condition governed the blood picture.

There is one lesson from this report which unfortunately some of our doctors have never learned. Clinical judgment still holds supreme rank in deciding a course of action.

A CASE OF ADVANCED BANTI'S DISEASE FOLLOWED BY SPLENECTOMY.

H. E. GUERRIERO, M. D.,

MONROE, LA.

The syndrome of enlarged spleen and severe anemia was first fully described by Guido Banti in 1894. He was the first not only to call attention to the cirrhosis of the liver that is so characteristic of the late stages, but also to offer evidence as to the primary relation of the spleen, and to suggest its removal as to the most logical treatment.

Mr. S., a white male, age 49 years, by occupation a carpenter, was first seen December 5, 1927, complaining of vomiting of blood, general weakness and soreness over splenic region.

Present illness: Patient was in good health until present illness, first noticed by him in November, 1926, at which time he felt perfectly well except for an occasional attack of head cold associated with soreness over spleen and general neuralgic pain through his gums and teeth, otherwise he felt in perfect health. The soreness over his spleen was always preceded by an acute head cold. He had several such attacks up until July, 1927, when he vomited a very large amount of fairly bright red blood for the first time. During the month of July he had five such hemorrhages in all. Two transfusions (500 cc. citrated blood) were given during the month. Patient said he improved following the transfusions, but never regained his full strength. During and following the hemorrhages patient suffered no gastric or other discomforts except for a general weak feeling and soreness over splenic region, no melena present except on days following hemorrhages, no diarrhea. Patient suffered no further discomforts other than what has previously been mentioned up until December 1, 1927, when he again vomited blood in large amounts without any associated pain or discomfort. Had three such hemorrhages and was sent to the hospital on December 5, 1927.

Appetite has always been good, there has been no gastric disturbance, no diarrhea, and no melena except after hematemesis. Symptoms of respiratory, cardio-vascular and urinary system dysfunction have been entirely absent.

There has been no loss of weight before he first vomited blood in July, 1927. Since this time he has lost about twenty-five pounds.

Physical examination: Reveals a white male well developed and fairly well nourished, lying flat of back, apparently very comfortable. Patient looks very anemic, skin having a lemon tinge color. Approximate height 6 feet. Approximate weight 145 pounds. Skin is negative except for lemon tinge suggesting marked anemia. There is no glandular adenopathy. Pupils react normally to light and accommodation. Patellar reflexes are active and equal.

Head: No tenderness over sinuses on marked pressure. (a) Eyes, no scleral jaundice, conjunctivae pale. (b) Mouth, majority of teeth removed August, 1927. Remaining teeth poorly kept, but are in fairly good condition. No evidence of pyorrhea alveolaris. No pus could be expressed from tonsils.

Chest: Symmetrical. Ribs prominent. Lungs: Negative. Heart: No cardiac enlargement; systolic murmur present at apex, not transmitted, functional in type, possibly due to marked anemia.

Abdomen appears somewhat distended, with bulging in flanks suggesting fluid. Veins over the lower abdomen plainly visible and appear congested. Palpation reveals no tenderness or rigidity. Liver is not palpable. In splenic region a very hard smooth tumor mass is present. Tumor extends to level of umbilicus downward and to midline to the right. Mass is somewhat movable and is somewhat tender on marked pressure. On percussion shifting dullness was present. Extremeties: No edema present. No arteriosclerosis present in radial vessels. Blood pressure was 98 systolic, 64 diastolic.

Latter history: Patient was first seen on December 5, 1927. Blood picture at this time showed: Erythrocytes 1,810,000, hemoglobin 35 percent (Talquist), color index .9, leukocytes 20,550, small mononuclears 19 per cent, large mononuclears 1 per cent, neutrophils 80 per cent. No malaria plasmodia found and no nucleated red cells. Polychromatophilia and anisocytosis present.

December 6: Wassermann, negative; kidney function test, 50 per cent; coagulation time, 4 minutes; bleeding time, 1 minute; fragility test for erythrocytes, normal.

Urinalysis: Negative except for trace of indican and a few pus cells.

December 7: Almost daily blood counts showed but slight variation in the blood picture despite another transfusion of 500 cc. of citrated blood.

December 30: Splenectomy done. About 4000 cc. of straw colored fluid found in the abdomen. Spleen was found to be very hard and about seven times its normal size, was adhered to the diaphragm above and to the abdominal wall laterally. Stomach negative. Liver showed a fairly well

advanced cirrhosis. Immediately following operation 500 cc. citrated blood given as transfusion. Patient reacted from operation in very poor condition. Five hundred cc. 10 per cent glucose solution given as infusion twice daily for four days.

January 2, 1928: Patient improving. Erythrocytes 2,050,00, hemoglobin 40 per cent.

January 4: General condition good. Erythrocytes 2,720,000, hemoglobin 40 per cent.

January 9: Blood picture: Erythrocytes 2,400,000, hemoglobin 40 per cent. Patient complaining of soreness in right arm, which was found to be slightly swollen, red and very painful to touch. Slight edema of forearm and hand present. Tenderness present over basilic vein with evidences of thrombophlebitis present. Temperature 102°. Diagnosis of thrombophlebitis of axillary vein was made, following transfusions and infusions. Extremity was splinted and elevated.

January 11: Edema of forearm and hand disappearing, temperature curve dropping. Operative wound healed.

January 16: Blood picture: Erythrocytes 2,560,000, hemoglobin 40 per cent. Patient put on Minot-Murphy liver diet.

January 17: Discharged from hospital.

Pathological findings: Examination of spleen removed at operation. Weight 1500 gms. Capsule enormously thickened consisting of dense connective tissue. Microscopic examination reveals a marked increase of connective tissue throughout organ. Malphigian corpuscles are absent from section examined.

Diagnosis: Splenomegaly; fibrous. The histological picture is that of late Banti's disease.

Progress notes: Patient up and about, gradually regained full strength. March 25, 1928, no return of ascites. Blood picture: Erythrocytes 3,750,000, hemoglobin (Dare) 58 per cent, total leukocytes 19,000, neutrophils 52 per cent, small mononuclears 46 per cent, large mononuclears 2 per cent. No nucleated reds were observed.

HEALTH THROUGH ADVERTISING. — The health motif has taken the advertising world by storm. Whether it be safety razors, a new breakfast food or rubber heels; tooth brushes or dentifrices or a gargle for the garrulous throats of the multitudes, the banners of improved health are flaunted in the van, and the rustling of their silky folds obscures the music of the steady stream of cold cash that pours into the coffers of the advertisers. The California fruit growers of Los Angeles continue to rid the world of acidosis, aided by a stupendous advertising campaign in the lay, and, we fear, in the medical press. Fleischman's yeast (none other will do) continues to remove acne as if with sandpaper, and restores to health the racked and costive bodies of famous athletes, actresses and opera singers. The list of renowned health propagandists is a long one; the Cuban sugar planters are about to convince a willing populace that sugar plays no part in obesity, and certainly none in diabetes. Twenty-two thousand one hundred and fifty-two witnesses say, in the case of The People vs. Caffein, "My nervousness vanished when I changed to Postum!" 'Tis for your own good health—and the health of your family—you must buy a certain well known electric refrigerator. Only with one particular tooth brush can you gain gloriously white teeth and coral firm gums. To make this more effective, however, the danger line must be scrubbed with a special tooth paste, and the acme of health is achieved when you put new youth into your stride with the buoyant, lasting spring of rubber heels. Indeed it reads like poetry. Enjoy shoe health, a St. Louis firm tells us, for whatever your avocation, good health is a vital asset, and the shoes you wear are a very important factor in keeping you physically fit. Cod liver oil raises the 80 per centers to 100 per cent. health. The average man of 35, we are told by the American Barley Corporation, is beginning to slip physically—to lose that vital, physical force, that buoyant enthusiasm, which makes his ideas "go across". Cream of barley is a demulcent; it sends men to work to win.

At the other end of the health rainbow—and remember that rainbows are elusive—lies what we who are engaged in the profession that deals with health and disease believe to be the true pot of gold; the health examinations; advice, as sound as we can make it, on hygiene and right living; early and correct diagnosis if possible; ethical treatment, and the intelligent education of the public along the lines of health and disease. We may not be accomplishing, always, the end towards which we are striving, for we are often the victims of personal bias or of lack of knowledge, and in our own ranks are those who do not fight the good fight. In the main, however, we are trying and we are accomplishing. Many diseases have been conquered and the span of life has been lengthened, and this without the aid of very many of those vendors of profitable products whose watch word is halitosis, for Lister, though less well known, has served humanity better than has Listerine.—Boston M. & S. J., 198:870, 1928.

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LEGISLATIVE MATTERS.

The State Committee on Public Policy and Legislation, under the able guidance of Dr. B. A. Ledbetter, deserves the hearty congratulations of every medical man in the State of Louisiana, be he a member of the Society or not. At the expense of an immense amount of time and labor, this most efficient committee has been responsible largely for the checking off of many pernicious bills which have been presented at the last session of the State Legislature. These men have worked diligently and faithfully, have neglected their other activities in order to give time and energy to their duty to their fellow practitioners. They have attended the sessions of the Legislature, have appeared before committees, and have spent days at Baton Rouge when necessarily their income from medicine must cease while they are away from their homes. They have been responsible for the squashing of such bills as the Chiropractic Bill before it got out of Committee, appearing there at the sessions of the Committee explaining fully and cogently just why such bills were harmful. To Dr. Ledbetter and his able co-workers, Dr. Leon J. Menville, Dr. Roy B. Harrison, Dr. P. T. Talbot, Dr. E. L. Leckert, the Committee from the Orleans Parish Medical Society, headed by Dr. Jules Dupuy; the Louisiana State Board of Medical Examiners, and others who have assisted, the thanks of the medical profession are due.

It seems like a very small thing indeed to ask the members of the Louisiana State Medical Society to contribute $1.00 in part towards the expenses of these men while in Baton Rouge. It might be borne in mind that only a relatively small percentage of this amount is actually used to defray the expenses incurred directly by the members of the Committee. The greater part of it goes to pay for legal advice and counsel, secretarial help, telegrams, postage, stationery and so on. Surely, no dollar that the medical man in this State spends in the coming year will yield him a greater dividend than this one small dollar which he is asked to give to meet these expenses. Actually the momentary cost of what the members of the Society might have to pay for the value received, would be ten or twenty fold greater were it not that their services were given voluntarily and gratis by all those who helped at Baton Rouge.

Senate Bill Number 241 is probably the most important one that was introduced in the State Legislature from the point of view of the physician. The repeal of the narcotic act was also important, as it will obviate considerable time and trouble to

doctors of medicine. In addition to these bills, Senate Bills Numbers 115, 265, 100, 157, 234, and House Bills numbers 149, 501, 504, 302, 171, 388, 390, 705, 93, 414, 530, 354, 709, 315, all had contained certain features in which the medical profession were interested. It may be seen from a superficial view of the number of bills that were introduced relating to medicine and medical activities that the Committee had a very large job to carry through to a successful conclusion.

STATUS LYMPHATICUS.

Considerable healthy skepticism has arisen in the past few years in regard to the indefinite and about which little is known condition spoken of as status lymphaticus. More particular has been the growing conception that an enlarged thymus in a child dying of inexplicable cause is not responsible for the death of that child. Pathologists are appreciating the fact that enlargement of this gland, and the enlargement of the lymphoid tissue throughout the body, is a normal finding. Otolaryngologists have long appreciated that big tonsils are part and parcel of a child's makeup. Unfortunately the opportunity of examining the body of a child dead as a result of some traumatic cause rarely takes place. In the past the pathologists' ideas of a normal child have been gained from examination of children who have died from long continued wasting disease in which one of the salient features is the rapid atrophy of the lamphoid tissue. Marine*, in a recent paper, discusses the condition of status lymphaticus most fully. He concedes that there are probably a very small group of patients who have an anatomical abnormality evidenced by marked increase in the lymphoid tissue, small suprarenals, lymphocytosis, and hypoplastic aorta; the most important feature of this condition being the insufficiency of the adrenals, because Marine has found that removal of the adrenals is followed by a much lowered resistance to toxins and poisons. He advances the idea that involution of the human adrenal cortex occurring after the child had been born may explain the condition which we speak of as status lymphaticus in young children. Under any circumstance this condition is very uncommon; the explanation for it is not entirely convincing; enlargement of the thymus is not a diagnostic sign of infallability; and certainly there is still much to learn about these inexplicable deaths which we have been wont to call status lymphaticus.

*Marine, David: Arch. Path. and Int. Med., 5:661, 1928.

HISTORY OF THE LOUISIANA STATE MEDICAL SOCIETY.

The History of the Louisiana State Medical Society, made possible by a special act of the House of Delegates, is progressing rapidly and favorably under the able editorial guidance of Dr. Rudolph Matas. For the past three months Dr. Matas has had working under his direction a Secretary-Librarian who has already compiled a great many interesting and important data. The work will progress more rapidly and could be accomplished in much quicker time if the co-operation of the parish and district society secretaries was more wholehearted than it is. Considerable difficulty has been experienced in securing information from these sources. It is hoped that the Secretaries will appreciate that much of the worth of the volume will necessarily have to depend upon the aid that they can and will give.

A discouraging feature, which it is believed is due entirely to tardiness rather than to unwillingness, is the small number of prospective subscriptions. Less than one-third of the subscriptions which will make the work a financial success have been received. It is most earnestly hoped that the men who intend to subscribe to this interesting history of the activities of the Society will send in their subscriptions at the earliest possible moment. It will hearten and encourage the Committee materially to know that their work is appreciated.

HOSPITAL STAFF TRANSACTIONS

SOUTHERN BAPTIST HOSPITAL.

June 12, 1928.

The regular monthly meeting was held June 12, 1928.

CASE OF MENINGITIS.

Dr. Charles S. Holbrook presented a very interesting case of meningitis The patient was a little girl of eleven years. She was admitted to the hospital on the twenty-fifth of last month to the service of Dr. Carroll W. Allen. As soon as Dr. Allen saw the child he realized it was not a surgical condition, and called Dr. Holbrook in consultation. Her history, as it is recorded on her chart, is as follows: She came into the hospital complaining of chills and fever. The present illness began yesterday morning; that is, the day previous to admission, when patient had chills followed by high fever, and, at this time, there was some nausea and vomiting. Calomel was given, which was retained. She complained after this of pains in her back and generalized pains, especially in various joints. She has been in a mild stupor since yesterday morning. She has had very severe headaches several hours before her admission to the hospital.

When Dr. Holbrook saw the patient in the hospital, she was extremely restless, throwing herself backward and forward across the bed and was unable to co-operate. It was impossible to get an answer from her or to get her to talk. She complained of pains in the head and of almost anything. Even a touch on the abdomen hurt her. The marked symptoms were restlessness and cloudy memory. She had rather high fever, 103°. A blood picture showed the leukocypte count to be 37,000, of which 90 per cent were neutrophils. On examination it was found that her neck was stiff. A spinal puncture was taken immediately under gas anaesthesia. The fluid was decidedly cloudy. Examination showed it to have about one thousand cells, almost entirely neutrophils. Then, about one hour from this, another anesthetic was given the patient and 15c.c. of serum was injected. The next day another 15c.c. of serum was given, at which time it was again necessary to give an anesthetic. After this, however, it was not necessary to give a general anesthetic on subsequent occasions. After the fourth intraspinal treatment the spinal fluid was negative. After the first treatment of serum she was very much better. Her temperature was less, and she became conscious ond co-operative. The fluid was so clear after the fourth dose that the fifth dose was hardly necessary. She has gradually gotten better. Now, the patient is quite well and is going home tomorrow.

Dr. Holbrook feels that the splendid result is largely due to the early recognition of an unusual disease in the small town in which the child lived. Had the child waited one, two or three days longer, irreparable damage would have been done, and if she would have come through with her life, there would have been an aftermath of deafness, lameness, blindness, or imbecility.

Dr. Walter J. Otis, in discussing Dr. Holbrook's case of meningitis, said he thought Dr. Holbrook has covered the situation very thoroughly, and has treated this disease correctly. The aftermath is what must be guarded against, the effects after the disease is supposed to have cleared and the patient has apparently recovered. The child appeared to him to be a case more of a choreic type. He noticed two or three tick-like movements as she sat in the chair. It is probably a reticulis, which is very painful.

Dr. Carroll W. Allen said he saw the child one afternoon and immediately recognized its nature. He called for Dr. Holbrook to see the patient immediately, and Dr. Holbrook responded in a short while.

Dr. Charles S. Holbrook stated another interesting point in this case, which he did not mention. The lady who came in the room with the child tonight has a son who attended college. While in college the boy developed menigitis and it was several days before a diagnosis was made and treatment given. The boy recovered, but his mental condition has never been well and he is totally deaf. He was back home in the same town as this child for sometime, about eight or ten weeks, before this child had become ill. There may have been some connection between this boy as a carrier and the development of meningitis in the child. The authorities of the town made cultures of the family and those who came in contact with the boy, but no organisms or carriers were found.

SECOND CASE OF MENINGITIS.

Dr. Charles S. Holbrook presented a second case of meningitis. Mr. J. P., medical student, aged 24 years, admitted to hospital May 9, 1928.

On May 8, in the afternoon, patient complained of chilly sensation and of feeling feverish. Temperature was taken that afternoon and was 102°. There was moderate headache, general malaise, and pains over the body. The symptoms were similar to those of a beginning influenza, or other infectious disease. The above symptoms increased over night, until he was admitted the following morning to the hospital.

Examination showed a well developed and well nourished acutely ill young man. The general examination was negative, except for slight rigidity of the neck and a moderately well developed Kernig's sign on both sides.

A spinal puncture was done and the fluid was found to be under considerable pressure. There was a distinct cloud. The cell count was 1,000; globulin—four plus; Wassermann—negative; intracellular gram negative diplococci were found in moderate numbers. The blood picture on May 9 was 20,900,—96 per cent neutrophils. May 10, the day of the spinal puncture, there were 16,000 leukocytes with 93 per cent neutrophils.

After finding the above mentioned organisms in the spinal fluid, another spinal puncture was immediately done and 30c.c. of polyvalent antimeningococcic sérum was given intraspinally and 30c.c. intravenously. May 11, 25c.c. of spinal fluid was removed. It was clouded, but seemed less so than on the previous day. Thirty c.c. of serum was given intraspinally and 30c.c. intravenously. His mental condition, which had been decidedly clouded the first few days, showed a marked improvement. He was perfectly clear in every respect. On the twelth of May and also the thirteenth, 30c.c. of serum were given intraspinally each day. At this time the fluid was decidedly less clouded and had taken on a greenish tinge. No serum was given on the fourteenth. On the fifteenth, the spinal fluid appeared very clear. Thirty c.c. of serum was given intraspinally. It is felt that this latter dose could have been omitted.

Spinal punctures were done every day for two or three occasions. The fluid remained clear. May 25 the patient was discharged.

Cultures were attempted from the blood with negative results and the organism could not be grown from the spinal fluid.

Upon admission, temperature was 104°; pulse 120. On the tenth, temperature was 104.6°; pulse 130. At this time the serum was given. The temperature fell to 100.2°, and did not rise again above this, except the time when he had a serum reaction. Cultures from the nose and throat did not show any organisms similar to those found in the spinal fluid.

The patient made a complete recovery and was able, within three weeks, to leave the hospital to finish his final examinations in medicine. He had an internship, but has been advised to take a vacation of ten or twelve weeks before entering into this work.

A REVIEW OF THE USE OF THE SEDIMENTATION RATE AS EMPLOYED IN THE SOUTHERN BAPTIST HOSPITAL.

Dr. Edwin H. Lawson said the procedure known as the estimation of the sedimentation rate of erythrocytes is by no means an innovation, for Galen noticed that the settling of erythrocytes was more rapid in cases of infection than in the blood of normal individuals. This observation has since been noted by other men, such as John Hunter, Virchow, Fahraeus, Hober, and, recently, Linzenmeier, Cutler, and Westergreen have each devised a technic for the estimation of the sedimentation rate. The technics vary only in the type of tube used and the percentage of anticoagulant, namely, sodium citrate, used. All of the technics consist of mixing the various amounts of blood, with an anti-coagulant, and of placing this solution of blood and citrate in a tube and noting the time required for the erythrocytes to settle. Two types of tube most generally used are the Linzenmeier and Cutler types. The former requires a small amount of blood, but the latter, a graphic method, is more useful in the follow-up work, as the increase or decrease in sedimentation rate, using this method, can be seen at a glance.

The estimation of the sedimentation rate has been used in quite an assortment of cases, being most frequently used in the prognosis of such diseases as tuberculosis, and other pulmonary conditions, appendicitis, and most particularly acute pelvic infections. Polak has advised the use of the sedimentation rate as an indication of the time to operate on pelvic infections, and has found that following a pelvic operation a low sedimentation rate is an early index of a beginning peritonitis or perimetritis. In tuberculosis, the sedimentation rate is directly proportionate to the activity of the disease; and in acute polyarthritis the sedimentation rate is directly proportionate to the clinical symptoms.

The following is a list of cases in this hospital, with an estimation of the sedimentation rate, using the Linzenmier technique:

Mrs. T. Diagnosis: Acute pelvic inflammatory disease. Four determinations made; two of which ran eighteen minutes, and two of which ran twenty minutes.

Mrs. R. Diagnosis: Fibroid. Forty minutes.

Mrs. P. Diagnosis: Chronic endometritis. Seventy minutes.

Mr. S. Diagnosis: Acute infectious arthritis. Three determinations made: two of which ran fourteen minutes, and one of which ran thirty-two minutes.

Mrs. M. Diagnosis: Chronic myocarditis. Fifteen minutes.

Mrs. L. Diagnosis: Influenza. Twenty minutes.

Miss R. H. Diagnosis: Acute lymphadenitis. Sixty minutes.

Miss H. Diagnosis: Supprative pleurisy. Ten minutes.

Mr. D. Diagnosis: Acute appendicitis. Twelve minutes.

An analysis of these cases each show that in general the rapidity of the sedimentation rate is directly proportinate to the acuteness of the illness. In most of these cases the sedimentation rate is of diagnostic and prognostic value when considered in conjunction with other laboratory findings and the clinical symptoms, that there is some relation existing between the severity of the disease and the increase in the sedimentation rate, and that it may be of some aid to the surgeon in deciding when to operate in infectious cases.

Dr. Lawson also presented three charts, representing graphically the sedimentation rate in various diseases, the relation of the sedimentation rate to the white cell count and a drawing of the two types of tube most generally used.

DISCUSSION.

Dr. Carroll W. Allen, in discussing this subject, stated that the sedimentation rate is a clinical aid in studying the prognosis of a case and in determining the time to operate. He suggested that if this test was intelligently used it would offer an extensive range of usefulness.

Dr. Thomas B. Sellers said he has run a sedimenation rate test on all of his pelvic infectious cases for several months and on two ectopic cases. He also said that in an interview with an out-of-town doctor, he learned that the sedimentation rate was run routinely in his hospital on all pelvic infectious cases. It is found to be more dependable than the blood count as a prognostic and a diagnostic agent, though it does not necessarily eliminate the blood count at all. The sedimentation test has been used also routinely to determine the time to operate. Many times in these pelvic cases with a perfectly normal temperature and a perfectly normal blood count there is found, upon opening the abdomen, exudate and friable adhesions. It is often realized, after opening the abdomen, it would have been much better to have allowed these cases to rest two, three, or four weeks longer. The sedimentation test usually notes this particular type of case and determines the time to operate. The rule is that in sedimentation rates of less than one hour, no surgery should be done.

There is another interesting point in the sedimentation rate. It is supposed to be normal in ectopic cases and rapid in infectious cases. If this is true, and in two cases that Dr. Sellers has tried this fact has been borne out, it is of great diagnostic value in differentiating between ectopic and subacute pelvic diseases. One big advantage in the sedimentation rate is that it can be used in the rural districts without the use of the microscope. Besides this, it can be used in any doctor's office with a great deal of ease if the doctor is willing to take the blood and have an assistant read the sedimentation time every five minutes, or fifteen minutes.

Dr. H. W. Kostmayer stated that he has had a limited experience with this test. He agreed with Dr. Sellers that the sedimentation rate is probably the most valuable method we have of indicating the resistance of the patient, or, another way of stating it, the prognosis, and especially is it of value in determining the time to operate.

Dr. William D. Phillips said that four or five years ago, when this sedimentation test was first suggested, he used it quite a bit in his service at Charity Hospital. At that time he had much trouble in securing the co-operation of the Interne Staff. One great advantage of this test is the comparatively simple technic. Dr. Phillips discharged one of his patients the other day from this hospital with a sedimentation rate of over an hour. Accordingly, it would have been safe to operate. But there was one point he could not get away from. Dr. Phillips suggested, not as a discouragement of this sedimentation rate, but rather as a caution in using it, that we must not overlook the temperature chart. The patient that was discharged from this hospital the other day was not operated upon, even though the sediimentation test would indicate that operation was safe, because she continually ran temperature. Sometimes there is too much enthusiasm when using this test, and the temperature charts are overlooked. If this test is used with other scientific methods, it should be of great value.

Dr. Edwin H. Lawson, in answer to a question, read the following excerpts from reprints:

Gram found that the amount of fibrogen increased with a more rapid sedimentation rate.

Fahraeus and Hober decided that the increase in agglutination of the erythrocytes was primarily due to a change in the electric tension between negatively charged erythrocytes and positively charged bodies in the plasma.

Smiley explains the increase in the rate as due to an increase in the fibrogen and globulin with a relative decrease in the albumin content of the plasma. The above factors, hence, give an increase in the viscosity and diminution in surface tension of the plasma and in the erythrocytes, a diminution in the negative electrical charge

with a change in the surface tension and an increase in the viscosity. He also noted that the temperature affected the rate as he found that the sedimentation rate was more rapid at incubator temperature than at room temperature.

Cooper found that as the cholesterol contents of the blood increase, the sedimentation rate becomes more rapid. He also found that defibrinated blood gives a slower rate after defibrination than previously.

Rubin explained the rapidity of the rate as due to tissue destruction, and that the bacterial toxins, products of protein catabolism and inflammatory products accelerate the rate; therefore, the more acute the condition, the more rapid the rate; the less virulent and numerous the bacteria, the less variation of the rate from normal.

In answer to another question, he said it has been his experience and it has been the findings of others that in cases of acute pyelitis there is a low sedimentation rate, as is the case in all acute inflammatory diseases.

AN UNUSUAL CASE.

Dr. H. W. Kostmayer presented a case that was very interesting to him because of the startling outcome. Mrs. P. A. H., aged 34, a mother of two children, had the last one ten years ago. She gave a history after child of ten years ago, of disturbed menstrauation profuse and prolonged uterine bleeding, and about eight months ago she began with a profuse discharge, more pronounced pain, finally having to take to bed. He made a diagnosis of pelvic inflammatory disease and put her to bed for six weeks with usual treatment of icebags and douches. She was then taken to the hospital, and, on admission, her leukocyte count was found to be 10,000. Thereafter, it was normal. Sedimentation time was most favorable. There was a normal leukocyte count with some mobility in pelvis, which had been previously quite immobile. Her urine showed a few pus cells and faint trace of albumin. No phthalein test was done, as the kidneys did not interest him much. Dr. Kostmayer then operated on her, and, on entering the abdomen, through a midline incision between the umbilicus and pubis, pelvic organs were found to be matted together with both large and small bowel adherent to them. The abdominal contents were walled off, and, after some tedious dissection because of bleeding, the pelvic organs were freed up and a supravaginal hysterectomy done. The adnexa were removed first because of bleeding, after which a supravaginal amputation of uterus was performed. A fairly good peritoneal toilet was secured, after which the appendix was sought. This was found to extend upward behind the cecum and a retrograde operation was necessary for its removal. Cat gut ligature, linen purse string used, and cautery used for amputation. The abdomen was closed with cat gut, reinforcing silk worm sutures, and silk worm was used in skin.

This patient was operated upon on Saturday morning and left the table in what was considered a very fair condition. Dr. Kostmayer was not concerned about her condition at all, but on the way down to the patient's room, the anesthetist, who accompanied the patient, noticed the pulse had become rather weak. Dr. Kostmayer was immediately notified of this and went to see her. Patient was then infused. That night she had become so much the picture of hemorrhage that he feared something was loose in her abdomen. She was given 450 c.c. of blood. She became somewhat better, but later, towards morning, she died. An autopsy was secured and the autopsy report showed an acute toxic nephritis, and fatty degeneration of the liver.

The startling thing about this case to Dr. Kostmayer is, that he considered this an absolute safe risk, and yet she died within twenty-four hours after operation. Incidentally, there was only about two drams of blood in the peritoneum and the peritoneal toilet was good. There was no surgical accident, and yet this woman of thirty-four years died. It was a startling shock, to say the least.

Dr. William D. Phillips asked what the functional kidney test showed. He cited a case of his of sometime ago, which impressed upon his mind the importance of paying very careful attention to the urinary findings. A patient of his was brought into the hospital for plastic work and his interne urged him not to take her at that time as the blood examination showed some slight anemia and the urine examination was below normal. Dr. Phillips did not think this would give any trouble and proceeded with the operation. The patient died of acute nephritis. This incident has taught him a lesson and now when he has a case showing low functional kidney test or other evidence of nephritis, he makes a more careful investigation before proceeding with the operation.

Dr. Thomas B. Sellers asked if it were possible for a liver to change in that short time—practically twenty-four hours. These types of cases are worth a great deal to surgeons as they mean so much to them in trying to solve the problems they meet.

Dr. Carroll W. Allen said that the rapidity of the development of the symptoms was startling, and brings to mind a similar case. The patient was a woman, treated about a year ago. She was quite robust and in excellent health. A cholecystectomy was performed, the patient's condition was apparently very good for twelve or twenty-four hours, but still there was something

about her that caused some uneasiness. She died in about seventy-two hours. The autopsy report showed a fatty degeneraion of the liver. In this particular case, all laboratory tests were run before operation and were normal, the physical condition was excellent, and yet this patient went out with fatty degeneration of the liver from no assignable cause.

Dr. Edwin H. Lawson said that in the case that Dr. Allen referred to, a diagnosis of hepatitis associated with alkalosis was made after a consideration of the symptoms of the case and the carbon dioxide combining power, which in this case was well above eighty. His attention was first directed along these lines by Heyd of New York, who clasified death following cholecystectomies into three classes: First: Those cases which have had previous operations on the gall bladder and which at the second operation, have had drainage of the gall bladder with more or less manipulation of the pancreas. Deaths in these cases are possibly due to a pancreatic ferment or toxin eliminated as a result of trauma of the pancreas. Second: Cases which show acute yellow atrophy of the liver or portal cirrhosis and die from liver exhaustion. Third: Deaths due to hepatic insufficiency, which is associated with alkalosis.

This case of Dr. Kostmayer's appears to be a death due to some severe toxemia as is shown by the destruction of the cells lining the tubules of the kidneys and the acute toxic epinephritis. The location of the degeneration in the liver would suggest toxemia occurring somewhere along the tributaries of the portal vein. Associated with the above, such degeneration of the kidneys caused by toxins of either bacterial or chemical origin and the sub-group of the latter would include the products of protein cleavage. While the death cannot be definitely and concisely ascribed to any cause, it is most probably due to the toxemia produced by the protein cleavage products.

Dr. H. W. Kotmayer, in answer to Dr. Phillips, said the two pre-operative steps he did not take in this case were to have a phthalein test done and to have a chemical study of the blood made. Because of the excellent general health of the patient, her age, and a normal urinalysis, a phthalein test was not reconsidered. Coupled with a normal temperature there was a slow sedimentation time. If there had been a delay of forty-eight hours or seventy-two hours following operation before she died, he could have understood that running a P. S. P. might have saved her life, if she had a poorly functioning kidney, but Dr. Kostmayer thinks no matter what the condition of her kidney, the failure of the organs of metabolism was primarily responsible. This case was either one of hemorrhage, which was doubted because of the technic employed, or it was a case of complete collapse of the organs of metabolism. It seems her metabolic organs just stopped. The rapidity and abruptness of what seemed to be a safe risk completely disarmed and startled Dr. Kostmayer.

THE PRESBYTERIAN HOSPITAL CLINICAL SOCIETY.

The Society held its monthly meeting on the last Thursday of the month. The scientific program contained a discussion of several interesting cases and an interesting presentation of several interesting presentation by Dr. C. G. Cole on Polyposis of the Gastro-Intestinal Tract. Dr. Cole's short but interesting paper was based on personal experience with four such cases—the histories of which were presented—and a discussion of the various signs and symptoms which might lead to the diagnosis of these cases. He pointed out that the most usual type is the adenoma. Lipomata, fibromata, and myomata have also been reported. The growths may be pedunculated or sessile; and they may be submucous or subserous.

According to the author polypoid adenomata of the gastro-intestinal tract is a rare condition. The clinical picture varies considerably; and a clinical diagnosis is most difficult. Very frequently the condition is only discovered at autopsy. Unless these tumors acquire a sufficiently large size they are rarely palpated. The fact is that they seldom become sufficiently large to be palpated. These growths may cause intussusception, obstruction, or bring about a severe hemorrhage. Occasionally they may also undergo malignant degeneration. Rarely these tumors slough off and are passed per rectum. At times these tumors are only discovered at operation.

Dr. Cole gave the case histories of four cases. They occurred in the stomach, small intestine, cecum, and sigmoid flexure.

In the discussion, which followed, Dr. D. C. Browne stated that he has recently been able to collect only twenty-eight of these cases from the literature, in which the stomach was involved, and accepted Dr. Cole's case as the twenty-ninth. He also brought out the fact that while the tumors are usually single in the stomach and the small intestine, the opposite is true for the large intestine. Their multiplicity in the large intestine makes treatment in this location very difficult and unsatisfactory.

A communication from the Board of Directors to the Staff expressed appreciation on the part of the former, for the confidence reposed in them. It was also brought out that the building program

is being strictly adhered to and going along without interruption. This meeting was the last until the fall, when they will be resumed.

FRANK L. LORIA, M. D.

THE CHARITY HOSPITAL SURGICAL STAFF.

Because of the hot summer months the regular meetings have been discontinued until the fall of the year. A case of unusual interest was reported at the last meeting by Dr. Alton Ochsner. This was a patient with cerebro-spinal rhinorrhea who made an uneventful recovery following an exploratory craniotomy, and has remained well until the present.

The patient was a woman thirty-six years of age, who three weeks before entry to the Charity Hospital, while getting out of bed noticed a profuse discharge of clear serous fluid from one of her nostrils. This flow was continuous up to the time of admission, when she was sent into the ear, nose, and throat service. Her complaint, in connection with this condition, was nausea caused by the salty taste of the secretion, as it ran back in the mouth and throat. There were also severe and persistent headaches—the latter, however, were not coincident with, but antedated the rhinorrhea by six or eight months.

Checking up the quantity of fluid discharged over a twenty-four hour period, measured at hourly intervals, some very interesting results were obtained. The amounts varied considerably, from 5 c.c. to 70 c.c. per hour. It was clear, watery in character, and the discharge was most profuse after eating. She was observed over a period of several weeks during which time careful neurological examinations were made. The neurologists found very little except for a diminution in cutaneous sensation over the left side of the body, and a diminished left corneal reflex. Roentgen-ray of the skull showed a defect in the anterior cerebral fossa; and because of the symptoms, headache and apparent defect in the skull, it was thought she had a tumor of the anterior cerebral fossa. An exploratory craniotomy was done, exposing the anterior fossa of the right side according to the method of Cushing. The entire fossa was explored, but no pathology could be demonstrated. There were a few adhesions between the dura and the floor of the anterior cerebral fossa. Exploration was carried out as far back as the middel of the cerebral fossa, and from the median to the lateral portion of the skull. Since nothing could be found, and because of her headaches and increased pressure (18 mm. of mercury spinal fluid pressure) it was decided to do a decompression. The dura was left opened and the osteoplastic flap replaced.

At first the patient did well, and had only a slight discharge from her nose. After the first day the rhinorrhea stopped. On the tenth day she had a headache. The spinal presure was found to be the same. Ten c.c. of fluid were removed. From that time she became free of headache; and until one week after discharge, when she was last heard from, there was no recurrence of the headache nor the rhinorrhea.

What the condition was we are at a loss to say. The only explanation of the results obtained that we can give is that it was probably due to a plastic exudate resulting from the operative trauma, sealing the small fistulous opening which prevented the escape of fluid. What the ultimate result is going to be we are at a loss to say. The case is presented merely as an unusual one; and in which no pathology could be found. Dr. Granger stated that the adhesions between the dura and the floor of the anterior cerebral fossa would have produced the same picture as that due to the tumor producing the erosion. No cause could be determined for the increased cerebro-spinal pressure.

FRANK L. LORIA, M. D.

ROUTINE CHOLECYSTOGRAPHY.—It would appear (1) that the routine application of cholecystography by the oral route is a very valuable procedure, accessible to any radiologist, and readily used with the routine gastro-intestinal patient.

(2) That approximately one-half of the patients referred for gastro-intestinal examination will show evidence of functionally disabled gall bladder.

(3) That the positive evidence of gall bladder from oral cholecystography will be found as correct as any interpretation in the domain of radiology.

(4) That the gall bladder which fails to outline (inconclusive in this series) is usually, but not always, a pathologic organ.

(5) That a diseased gall baldder may function normally, and that approximately 30 per cent of the patients proven by operation to have cholecystitis showed normal function with the Graham dye test.

It is possible that the demonstration of a normally functioning gall bladder in the presence of clinical symptoms of cholecystitis may have value in clinical management. It is conceivable that a gall bladder which can still empty itself under the stimilus of food may be within the realm of medical treatment, as compared with one which is so functionally crippled that it can no longer empty within a reasonable time, and which, therefore, becomes a useless organ demanding surgical removal.—Watkins, W. W., and Mills, H. P., Radiology, 9:91, 1928.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

During the past month the Society has held its regular Board Meeting and the Second Quarterly Executive Meeting.

At the Quarterly Executive Meeting reports of the Special and Standing Committees were read. The following resolution presented by the Condolence Committee was adopted:

Whereas, by the Will of God, Dr. Nathan Eisenmann, our confrere, was taken from among us.

Therefore, be it resolved, That this Society desires to express to the family of Dr. Eisenmann its regrets and sincere sympathy in its bereavement.

The following members were elected to membership: Active Members: Drs. Jonas W. Rosenthal, Seward H. Wills, Ralph C. Cross, F. J. Rohmer and Chas. S. Wood. Interne Members: Drs. M. W. Brown and E. L. Gill.

Dr. J. A. Colclough was reinstated to Active Membership.

This executive meeting is the last meeting of the Society until October.

It is with regret to report the death of Dr. H. S. Cocram, one of our honorary members.

TREASURER'S REPORT.

Actual Book Balance, 5/31/28	$1,492.62
Receipts during June	1,175.80
	2,668.42
Expenditures	1,185.69
	1,482.73
Outstanding checks	195.04
	1,677.77
Receipts since Bank Balance	132.69
Bank Balance	$1,545.08

LIBRARIAN'S REPORT.

Forty-four books have been added to the Library during June. Of these 13 were received from the New Orleans Medical and Surgical Journal, 6 by subscription, 12 by binding, 2 by purchase and 11 by gift. Note is made of new titles of recent date in the list herewith appended.

One reference list on periotonsillar abscess has been prepared and added to the file. Fifty-four pamphlets have been catalogued and added to our collection. The shift allowed by our new shelving has been partially completed, greatly relieving the congestion of the shelves, and giving room for growth in the Journal files. The reference work has continued through the hot weather to a gratifying extent, calls for study in connection with particular case work being in the majority. This use of the Library in every-day practice is a most promising phase of the work, and such calls either in person or by telephone are given immediate attention.

Gifts of Journals and reprints have been received from the following sources and have been gratefully acknowledged:

Drs. Roy B. Harrison, E. D. Martin, I. I. Lemann, J. H. Musser, Arthur Weil, E. C. Samuel and the Cincinnati Medical Library.

NEW BOOKS.

Coudry—Special Cytology. 2 v. 1928.

Nelson's Loose-Leaf Living Surgery. v. 5-6. 1928.

N. Y. University and Bellevue Hospital Medical College—Collected reprints from the Department of Experimental Surgery. 1926-27-28.

Louisiana State Board of Health—Sanitary Code. 1928.

Rockefeller Foundation—Methods and Problems of Medical Education. 1928.

Lorland—Ultra-violet Rays. 1928.

Rivers—Filterable Viruses. 1928.

Ross—Post-mortem Appearances. 1928.

Tylecote—Diagnosis and Treatment in Diseases of the Lungs. 1927.

Rehfuss—Diagnosis and Treatment of Diseases of the Stomach. 1927.

Crisp, ed.—Ophthalmic Yearbook. 1927.

Petty—Diabetes. 1926.

Foster—Examination of Patients. 1928.

Stewart—Compend of Pharmacy. 1928.

Stitt—Practical Bacteriology, Blood Work and Parasitology. 1927.

Jordan—General Bacteriology. 1928.

H. THEODORE SIMON,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

MEETING OF THE SOUTHERN MEDICAL ASSOCIATION.

Of interest to the members of the Louisiana State Medical Society is the approaching Twenty-second Annual Meeting of the Southern Medical Association. This meeting will be held in Asheville, North Carolina, November 12-15. The Association selected for their meeting place one of the most magnificently beautiful spots in this United States, where a large number of good hotels are prepared and equipped to take care of many more than usually register at the Association Meetings.

The program commences on Monday, November 12, with clinics arranged by the local profession. In the morning these will be held at the Government Hospital at Oteen, the largest hospital for tuberculosis in the Veterans' Bureau. Afternoon clinics will be held at the City Auditorium, Asheville. On Tuesday there will be special clinics and demonstrations given by the leading practitioners of the South. The last two days of the meeting will be devoted to the scientific program of the seventeen sections.

This Annual Meeting of the Southern Medical Association has become the second largest medical meeting in the United States, the American Medical Association only surpassing it in number of men in attendance. The Association meeting deserves all that it has accomplished and more. Every physician of the Society who could possibly get away to attend this getting together of Southern doctors should do so. The scientific program and the social activities insure an instructive as well as a pleasant time.

ST. TAMMANY PARISH MEDICAL SOCIETY.

Meeting of St. Tammany Parish Medical Society, July 13, 1928, at St. Tammany Hotel, Mandeville, La.

Meeting called to order by the President, Dr. F. F. Young, with Secretary, Roland Young, at his post. On roll call the following answered: F. R. Singleton, J. F. Polk, J. K. Griffith, R. B. Paine and A. G. Maylie. Dr. Herrin. of Bush, La., was an invited guest and a prospective member.

The President urged better attendance and complimented the Slidell doctors on their regular attendance.

The minutes of the meeting of May 11 and June 22 were read and adopted.

Dr. Roland Young then gave a clinical case paper on tabes dorsalis complicated with an arthritis of the rim of the ilium between the anterior and posterior iliac spines and of the third and fourth dorsal vertebrae as shown by radiograms. Symptoms and treatment was brought forward in detail. This clinical case paper proved very interesting and discussions followed by Drs. Paine, F. F. Young, Sr., and J. K. Griffith.

Dr. Paine, in citing clinical case discussions, mentioned a woman who was stabbed into abdomen five nights ago with intestines protruding and told of his replacement of bowel and sewing up of wound. The case was then sent immediately to the hosiptal in New Orleans and said when last heard from that afternoon was still living.

Communications were then read by the Secretary-Treasurer. One letter from the Secretary-Treasurer of the State Society asked for an extra special tax of one dollar on each member as ordered by the executive committee to defray unusual expense of the committee of the State Medical Society on publicity and legislation. The Secretary was instructed to go ahead and get this money out to Dr. Talbot.

Application to membership of Dr. Herrin, under unfinished business, was then in order and investigating committee reported its approval of applicant. Vote was taken and there was no blackball—all present voting.

ROLAND YOUNG, M. D.,
Secy-Treas.

U. S. P. H. S. NOTES.

Surgeon General G. W. McCoy has been ordered to proceed from Washington, D. C., to Carville, La., for conference relative to cases of leprosy.

Assistant Surgeon (R) A. P. Rubino. Relieved from duty at Marine Hospital, New Orleans, La., on July 5, and assigned to duty at Marine Hospital, San Francisco, Calif.

A. A. Surgeon C. P. Munday. Relieved from duty at Marine Hospital, New Orleans, La., and assigned to duty at Marine Hospital, Carville, La.

Assistant Surgeon P. A. Neal. Relieved from duty at Marine Hospital, New Orleans, La., and assigned to duty at Marine Hospital, Mobile, Ala.

Assistant Surgeon W. L. Barnes. Relieved from duty at Marine Hospital, New Orleans, La., and assigned to duty at Marine Hospital, San Francisco, Calif.

Assistant Surgeon L. C. Watkins. Relieved from duty at Marine Hospital, New Orleans, La., and assigned to duty at Marine Hospital, Norfolk, Va.

Assistant Surgeon R. G. Townsend. Relieved from duty at Marine Hospital, New Orleans, La., and assigned to duty at Marine Hospital, Baltimore, Md.

Surgeon (R) O. E. Denney. Directed to proceed to Jacksonville, Fla., and other points in Florida, as may be necessary, to assist the State Health officer in making diagnosis of suspected lepers and to accompany patients diagnosed as lepers to Marine Hospital, Carville, La.

Examination for candidates for commissions and assistant surgeons, U. S. P. H. S., will be held at New Orleans, November 5, 1928. Requests for further information should be addressed to Surgeon-General of the U. S. P. H. S., Washington, D. C.

The following assistant surgeons, Reserve Corps, United States Public Health Service, have been ordered to active duty and directed to New Orleans, La., Marine Hospital, effective June 28, 1928:

Drs. Jacques P. Gray, William F. Ossenfort, Kenneth R. Nelson, Joseph O. Dean, Herbert G. Brehm, Ivan W. Steele, Oswald F. Hedley, James W. Bryan, James T. Jackson, Walter P. Griffey, Vane M. Hoge, Raymond L. Evans, Russell S. Wolfe, Guy V. Gooding and Joseph W. Christie.

SIXTH DISTRICT MEETING.

The tenth annual spring meeting of the Sixth District Medical Society was held June 27th at Our Lady of the Lake Sanitarium, Baton Rouge, Louisiana:

Dr. T. C. Paulson was elected president to succeed Dr. A. G. Maylie. Dr. Guy Riche was elected vice-president, Dr. T. J. McHugh was elected secretary-treasurer, and Dr. Tom S. Jones as delegate to the Louisiana State Medical Society meeting and the president as alternate.

Drs. Wm. Scheppegrell and N. F. Thiberge presented talks on Hay Fever and Asthma. The discussion of these papers was opened by Dr. J. A. Carruthers of Baton Rouge.

A delicious luncheon was served by the hosts of the Sanitarium after which a Women's Auxiliary was formed.

The scientific program of the afternoon was devoted to the subject of Cancer of the Breast, the diagnostic, roentgenological, pathological and surgical point of view.

Drs. R. G. McMahon, Lester Williams, T. Spec Jones and H. T. Nichole led the discussion.

The entire day was voted a great success by the forty members of the organization who were present at the scientific and social programs of the day.

At the regular semi-annual meeting of the Sixth District Medical Society, held at Baton Rouge, La., on June 27, 1928, this self-explanatory resolution was unanimously adopted:

"*Whereas*, the official list of Physicians, Surgeons and Midwives, as published by the Louisiana State Board of Medical Examiners, contains no mark nor sign to differentiate between white and colored people, and,

Whereas, said failure to differentiate is repugnant and unsatisfactory to the members of this Society, as probably to the entire medical profession of the State of Louisiana, therefore, be it

Resolved, That the Louisiana State Board of Medical Examiners be and is hereby earnestly requested to adopt some form, mark or sign to designate the whites from the colored people in the aforementioned list and that the attention of the Board be called to the American Medical Directory published by the A. M. A., wherein the abbreviation 'col.' is used immediately following the names of colored people; and be it further

Resolved, That the President of this Society be and is hereby directed to communicate these resolutions to the Louisiana State Board of Medical Examiners, forthwith."

Respectfully,

A. G. MAYLIE, M. D.,
Past President, Sixth District Medical Society.

At a meeting of the Third District Medical Society, held in St. Martinsville, La., June 28, Dr. H. W. E. Walther, of New Orleans, read a paper on the Modern Treatment of Gonorrhea.

Dr. Charles J. Bloom, Professor of Pediatrics with the graduate school of medicine of the Tulane University of Louisiana, delivered an address to the Washington State Medical Society on June 28, 1928, with Ileo Colitis as the subject.

LOUISIANA STATE PEDIATRIC SOCIETY

The regular meeting was held at Baton Rouge, April 9, 1928, with L. R. DeBuys, M. D., president, in the chair.

The question of continuing the organization was brought up and it was decided that there is a distinct place for such an organization as the Louisiana State Pediatric Society. The society then proceeded with the scientific program.

The first paper, Status Inversus Viscerum Totalis, was presented by Dr. DeBuys. It was discussed by Drs. Naef and Signorelli.

The second paper, A Translation of a Report Upon the Research in Relation to the Bacillus Calmette-Gerin," by Dr. A. Bocchimi of the University of Perugia, Italy, read by Dr. Signorelli. It was discussed by Drs. Williams, Naef and DeBuys.

The third paper was read by Dr. Williams on Food Edema. It was discussed by Drs. DeBuys, Naef and Signorelli.

The fourth paper, Congenital Hemangioma, by Dr. Loeber, was read by title.

The fifth paper, Ichthyosis, read by Dr. Naef. It was discussed by Drs. Signorelli and Williams.

The society then went into its business session.

A verbal report upon the society was made by the president, Dr. DeBuys, who gave reasons for its existence and suggestions for its development.

There were no reports from committees.

Because so few members were present, no nominating committee was appointed and it was decided to allow the members present to act as a committee.

Under the head of new business, a resolution was presented as follows: "Because of adverse reports on experimental work conducted by several investigators, in connection with the Calmette anti-tuberculosis vaccine, also known as B. C. G. anti-tuberculosis vaccine, the Louisiana State Pediatric Society resolves: That the use of the B. C. G. anti-tuberculosis vaccine in the human be discouraged, until further positive evidence is obtained as to its efficiency and particularly as regards its harmlessness." This was unanimously carried. It was decided that this resolution should be published in the New Orleans Medical and Surgical Journal.

The next order of business was the nomination officers.

Dr. Signorelli placed in nomination Dr. L. R. DeBuys as president for the ensuing year. This was duly seconded and a motion to close the nomination was made, seconded and carried. The election was unanimous.

Dr. Williams nominated Dr. Emile Naef as vice-president. This was duly seconded and the same action as before was taken and Dr. Naef was unanimously elected as vice-president.

Dr. Naef placed in nomination Dr. C. T. Williams as secretary-treasurer. This was duly seconded and the same action as in the preceding instances was taken and Dr. Williams was unanimously elected secretary-treasurer of the society.

The following scientific committee was elected for the ensuing year: Dr. C. T. Williams, chairman, and Dr. John Signorelli and Dr. Maud Loeber as the other members of the committee.

The time and place for the next annual meeting, in accordance with the by-laws of the society, will be the same place and time as the meeting of the Louisiana State Medical Society, and will be held on the Monday of the week of their meeting.

C. T. WILLIAMS, M. D.,
Secretary-Treasurer.

RESOLUTIONS ON THE DEATH OF DR. L. C. TARLETON.

Whereas, it has pleased the Almighty, on April 10, 1928, to remove from our midst one of the oldest and most highly respected members of the medical profession, the coroner of Avoyelles Parish, useful citizen, Dr. Leo Chester Tarleton, and

Whereas, in the death of this venerable gentleman, the medical fraternity, Avoyelles Parish and Louisiana, sustain the loss of a man whose loyalty to all classes and creeds was unswerving, the loss of a man who towered high in the estimation of those who value rectitude and who have a proper appreciation for the lofty attributes which makes the private and public career, such as that of Dr. Tarelton, honorable and beautiful, therefore be it

Resolved, That the Avoyelles Parish Medical Society, whose privilege and honor it has enjoyed with the affiliation and co-operation of so valuable a member—an active membor for many, many years, an honorary member for the last few years—wishes to chronicle the death of a brother physician whose life has been an unbroken chain of religious, charitable and industrial performance,and whose noble deeds of professional ethics and kindness to all serve as a beacon light to posterity, therefore, be it further

Resolved, we extend the Society's sincerest condolences to his sorrowing widow and interesting family and that a copy of these resolutions be sent to them, a copy for publication in the New Orleans Surgical and Medical Journal, and a copy spread with our minutes as a permanent record.

WALTER F. COUVILLION,
SYLVAN DE NUX,
S. J. COUVILLION,
Committee.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

FACTORY INSPECTOR.

Believing that the State Board of Health has an opportunity to do a far greater service for the people of the state, especially the men, women and children who are working in the factories in ever increasing numbers, by inaugurating a great health program for the protection of the workers—our aim being to do everything possible for the promotion of the health, contentment, and happiness of the workers which will not only be a splendid service to these people but will also be profitable from a financial standpoint to the stockholders and owners of the various enterprises coming under the enforcement of child labor laws—and, because the Legislature has placed the responsibility for the administration of the act in the hands of the State Board of Health ("The State Board of Health shall appoint and may remove for cause a special inspector who shall have the title of factory inspector and who shall be a person having competent knowledge of factories and capable of performing the duties prescribed below"; "said inspector shall report annually to the secretary of the State Board of Health," etc.), we propose to carry on the work of the department according to Chapter 163, Laws of 1914, and in addition adopt the following course and program:

1. This department shall be considered the Bureau of Industrial Hygiene of the State Board of Health.

2. The factory inspector shall be a physician well trained in public health.

3. A woman assistant in the person of a well-trained public health nurse shall be assigned to the Bureau of Industrial Hygiene for at least six months during the year, or for nine or even twelve months if the work demands.

4. The factory inspector shall carry out a constructive program, during the summer months at least, in preventive dentistry—this to be done by the use of two or more mouth hygienists between school terms. Where deemed advisable these mouth hygienists can arrange a corrective program through the local dental society.

5. In addition to his other regular duties, the factory inspector and the nurse shall be held responsible for the physical inspection, follow-up work in the homes, and for health educational work, such as moving pictures, lectures, and the distribution of literature, also vaccinations and immunizations in all counties not having a full-time health department. The work is to be done in co-operation with the part-time health officer and factory physician.

6. In addition to reports required by Chapter 163, Laws of 1914, the state factory inspector shall make a monthly report of all his public health activities direct to the state health officer upon a form furnished him for the purpose. The public health nurse shall make monthly reports to the supervisor of public health nursing as the other public health nurses in the state. Her report is to be approved and signed by the state factory inspector. The mouth hygienists' reports will be made to the supervisor of mouth hygiene, State Board of Health, said reports to be approved and signed by the factory inspector. The inspector shall do his own work and in addition direct the work of the nurse and mouth hygienists.

Requests by the factory inspector for specialized services in work with crippled children, in tuberculosis, nutrition, and feebleminded, and other problems of a public health nature will receive immediate attention and everything possible done to promptly supply the need. Institutions and agencies doing these different phases of work will co-operate in a splendid way to bring about the best results.

This program will be put into effect July 1st when a public health nurse and oral hygienist will be assigned to the factory inspector.

It is the sense of the Board that no election of factory inspector should be made until the October meeting of the Board, and that the present incumbent, Dr. R. S. Curry, continue to serve until the matter is finally disposed of by the Board at that time.

Dr. E. W. Holmes, who was graduated by Tulane University in June, and was licensed by the State Board of Health at its recent session, is now located in Winona, Mississippi. He is associated with his brother, Dr. T. W. Holmes, who is in charge of the Winona Infirmary.

The Vicksburg Sanitarium held its staff meeting on July 11, 1928. Its scientific program was:

1. Rupture of Right Ovary with Intra-abdominal Hemorrhage, Dr. G. M. Street.
2. Ulcer of the Duodenum with Chronic Perforation, Dr. A. Street.
3. Fracture of the Os Calcis, with X-ray Studies, Dr. J. A. K. Birchett, Jr.
4. Aneurism, Probably of the Arch of the Aorta, Dr. L. J. Clark.
5. Tuberculosis of the Maxillary Sinus, Dr. E. H. Jones.

On July 12 the Homochitto Valley Medical Society held its regular quarterly meeting in Natchez. In the absence of the president the chair

Dr. John H. Musser, professor of medicine at was occupied by Vice-President E. E. Benoist. Tulane University, presented a paper on the subject of Euphyllin in the Treatment of Heart Disease.

Dr. J. S. Ullman reported a case of varicose veins treated by injections of sodium salicylate.

Another interesting feature of the meeting was a round table discussion of therapeutic measures.

The next regular meeting of the Homochitto Volley Medical Society will be held in October at which time officers for the ensuing year will be elected.

Dr. L. H. Lamkin of Natchez is confined to his bed on account of an attack of erysipelas.

Dr. and Mrs. Philip Beekman of Natchez are spending their vacation in Atlantic City.

The regular meeting of the Issaquena-Sharkey-Warren Counties Medical Society was held in Vicksburg on July 10, at which time the entire program was devoted to the subject of Tuberculosis.

The moving picture film, The Doctor Decides, was shown. This film was prepared by the American Child Health Organization and stresses the importance and methods of early diagnosis in tuberculosis.

The following physicians have recently settled in Vicksburg: Dr. J. M. Feder at the Vicksburg Infirmary; Dr. Hugh H. Johnston at the Vicksburg Sanitarium; Drs. Frank E. Werkheiser, Rex Goodman and H. C. Dillworth at the Mississippi State Charity Hospital.

The following compose the staff of the South Mississippi Charity Hospital, Laurel, Mississippi: Dr. R. H. Foster, superintendent; Dr. C. J. Lewis, assistant superintendent; Drs. J. R. Johnson and E. S. Roberts, house physicians.

The following medical students are here attending the clinics during the summer: J. W. Vaughn, Emory University; Hubert Flurry, University of Pennsylvania, and W. B. Hickman, Tulane University.

The correspondence given below shows again, without need of any further comment, the harm that the negro quack, Redmon, is doing. This seems to be another instance of the willingness of our courts to consider technicalities in the interpretation of the law rather than consider the public welfare. During the months that the State Board of Health has been restrained from putting a stop to the activities of this charlatan, many a poor sufferer from tuberculosis, cancer, or other equally serious conditions is wasting valuable time. It is a question, when we consider the dilatory methods of the courts in questions of public health and public welfare, whether the harm done by the loss of time should not be placed on the shoulders of the courts rather than on the shoulders of the quack.

Franklinton, La.
June 18, 1928.

Dr. F. J. Underwood,
State Health Officer,
Jackson, Mississippi.

Dear Doctor Underwood:

Has your office any information on the matter of Henry Redmond, negro, from Bogalusa, La., practicing medicine in Mississippi without license?

It seems that this negro makes medicine, and sells it in Mississippi, a few miles off in the country from the line of Louisiana. We thought he practiced also in Bogalusa, but the police say they can find no instance of such practice here. I understand he is doing a "land office" business, buying property in Bogalusa and seems to be prosperous. It is said whites and blacks go to him for many miles and it is said that there are instances of long waits for your turn to get a consultation and some of the miraculous medicine.

If you have any information on this matter to impart to us we will gladly receive it for consideration at our medical society. Our committee presented names of supposed patients to the police, but they say he does not treat here but requires all to go to his rendezvous in Mississippi.

Thanking you for any information you can let me have on this matter, I remain, with best wishes,

Fraternally yours,
JOHN SCHREIBER, Secretary,
Washington Parish Medical Society.

Dr. John Schreiber, Secretary, Washington Parish Medical Society, Franklinton, La.

Jackson, Miss.
June 19, 1928.

Dear Doctor Schreiber:

The negro Redmond was tried before Chancellor Dale last October and perpetually enjoined from dispensing his concoctions. Messrs. Sharp and Cassedy, representing the Attorney General's office, worked up the case and tried it with the results mentioned above.

Later, a member of the Supreme Court of Mississippi, Judge Ethridge, modified the injunction, which in effect permitted the negro to resume his lucrative practice. The negro has appealed his case to the Supreme Court. I sincerely hope that the case will receive the attention of said Court at an early date and that when the case is tried before the Supreme Court, the result will not justify Mississippi in being the laughing stock of Louisiana, Alabama, and Tennessee any longer in matters of this kind.

When the case is tried, I shall send you a copy of the decision which you may present to your medical society.

Very truly yours,
FELIX J. UNDERWOOD.

Hon. Rush H. Knox, Jackson, Miss.
Attorney General, June 19, 1928.
Jackson, Miss.
Dear General Knox:

I am enclosing copy of letter from Dr. Schreiber, Secretary, of the Washington Parish Medical Society, Franklinton, La., which is self-explanatory.

You see this negro knows better than to attempt to practice in Louisiana; he has his Louisiana patients come over into Mississippi where he prescribes for them and where he is, so far, immune to the law.

Would it not be possible to get his case before the Supreme Court at an early date in order to get him out of Mississippi? I know that your office has been doing everything possible and that but for that fact that Judge Ethridge modified the injunction, he would not now be in Mississippi violating our laws and obtaining money under false pretenses daily.

It will soon be a year since Chancellor Dale tried this negro quack. Right thinking people in this state, and there are many of them now, in the territory in which this negro operates think that it is an outrage to longer permit the state to place a premium on ignorance and superstition.

He is selling his concoctions in Philadelphia and a number of other places through other negroes and numerous complaints are coming in daily from places where Redmond is operating through other people.

Thanking you for your continued interest in the case, I am, with best wishes,

Very truly yours,
FELIX J. UNDERWOOD.

Judge George H. Ethridge, Jackson, Miss.
Jackson, Miss. June 19, 1928.
Dear Judge Ethridge:

I am enclosing copy of letter received from Dr. John Schreiber, Secretary of the Washington Parish Medical Society, Franklinton, La., which is self-explanatory. I have received numerous letters of this kind from Louisiana and Alabama, to say nothing of those received from different parts of Mississippi.

I am not inclined to blame you for undoing the good work of Chancellor Dale because, knowing you as I do, I have absolute confidence in your integrity and do not believe that you would do anything that is not in accordance with the law, but I do think it was most unfortunate and I hope that the case will come before the Supreme Court at an early date and that the facts presented by the Attorney General's Office and the State Board of Health from the record may justify the Court in sustaining Chancellor Dale's decision.

Again, I wish to express my confidence in you and to again say that I am not disposed to blame you, but simply feel that it was most unfortunate that this negro should be permitted to continue his practice, not only himself, but through at least a dozen other negroes in different parts of the state.

Very truly yours,
FELIX J. UNDERWOOD.

PATIENTS IN MISSISSIPPI STATE HOSPITALS FOR MENTAL DISEASE: 1927.

The Department of Commerce makes the following announcement concerning results of the 1927 census of mental patients in the two state hospitals of Mississippi:

These hospitals had a total of 1,056 first admissions during the year 1927, as compared with 1,008 in 1926, and 922 in 1922.

These first admissions represent patients received during the year, who had not previously been under treatment in any hospital for mental disease. Such newly admitted patients afford the best available measure of the number of new cases of mental disease which are brought under hospital treatment during a given year.

The increase in the number of first admissions to state hospitals in Mississippi between 1922 and 1927 was relatively greater than the growth in the State's population during the same period, as shown by the fact that the first admissions in 1927 numbered 59 per 100,000 of population as compared with 56.3 in 1926, and 51.5 in 1922.

The extent to which provision has been made for state treatment of mental patients is indicated by the number of patients present in the state hospitals on a given date. In Mississippi, the number of mental patients under treatment in the state hospitals has increased steadily from 1,978 on Jan. 1, 1910, to 2,990 on Jan. 1, 1928; and the ratio of such patients per 100,000 of general population increased from 110.1 on Jan. 1, 1910, to 167 on Jan. 1, 1928.

Of the first admissions in Mississippi during the year 1927, 633 were males, and 423 were females; and of the patients present on Jan. 1, 1928, 1,393 were males, and 1,597 were females.

These figures are based on reports furnished by the institutions. The figures for 1927 and 1928 are preliminary and subject to correction.

1928	.....	.....	2,990	167.0
1927	1,056	59.0	2,854	159.4
1926	1,008	56.3	2,727	152.3
1923	.....	.....	2,537	141.7
1923	922	51.5	2,510	140.2
1910	.....	.....	1,978	110.1

BOOK REVIEWS

Gynecology: By William P. Graves, A. B., M. D. Fourth edition, thoroughly revised. Philadelphia and London, W. B. Saunders Co. 1928. pp. 1016, with 562 illustrations, 128 in colors.

The amazingly rapid progress of the specialty of gynecology is in no way better illustrated than by the fact that within five years of the publication of the last edition of Graves' Gynecology, a new revision is necessary, or rather a new book, for this edition is considerably more than a revision. It is typical of the lines along which this specialty is advancing that whereas the section dealing with operative gynecology is changed only in comparatively unimportant details, the sections dealing with pelvic pathology show very extensive changes, and the section dealing with physiology is practically new. This corroborates the opinion of many observers, that surgery, in matters of technique and performance, has almost reached its inevitable limits, whereas, thanks to the patient work of tireless students in the fields of physiology, pathology and biochemistry, the conception of medical science is still in a state of flux, and even more radical changes are to be expected than have already occurred.

The Gynecology is a monumental reference work, more complete in every respect than any similar text of which the reviewer has knowledge. For such an encyclopedia of gynecology there is, of course, a very real need. On the other hand, the remarkable completeness of detail in a way does the book a disservice, for in the very multiplicity of facts there is sometimes a loss of perspective. Then, as is unfortunately more and more true of medical works, the mere size of the volume deters the reader. More than eighty pages have been added to the text, and the illustrations—which, by the way, are of a uniform standard of excellence—have also been added to, so that the bulk of the work has been very materially increased. Such a complaint is, of course, a trivial one, and of small import in the face of the general excellence of the presentation, but one does wish that there could be some limit to the increasing size and weight of medical texts.

One cannot fail to be impressed with the tremendous labor which this revision has evidently involved. The mere review of the literature, which is carried up to the date of publication, must have been an enormous task in itself, quite aside from the literary labor necessary to produce a book of this extent. To mention specific changes, the whole section on the physiology of the pelvic organs has been rewritten, and new material has been added relative to the physiology of the vagina and the fallopian tubes. The section on endocrinology is practically new and includes all of the recent valuable work of the Continental investigators, as well as of Robert Frank, Emil Novak and their co-workers. The same review of this particular subject is especially refreshing in the midst of the confused and exaggerated claims which the very mention of the glands of internal secretion so often produces. Endocervicites is presented in a new and more complete way, and the reviewer has nowhere seen a clearer presentation of the confused and overlapping subjects of kraurosis and leukoplakia of the vulva. The classifications of vulvitis, vaginitis and endometritis have been improved, but one notes, with regret, that oophoritis is still a vague and highly speculative subject. The sections on gynecologic tumors have been completely rewritten, and descriptions of many new and rare tumors have been added. It is unfortunate that these latter growths cannot be accorded a less striking presentation—possibly by some mechanical arrangement of type—so that the greater importance of the more common tumors might be emphasized. A new classification of ovarian tumors is advanced, based on new theories of histogenesis, which is decidedly clearer and more logical than the old Pfannenstiel grouping, though, as the author himself frankly acknowledges, it is still far from satisfactory. The section on endometriosis, which is entirely new, is the most comprehensive and valuable critique of this subject which the reviewer has seen, and the bibliography is very complete. The whole section on sterility has been rewritten, and the etiology and treatment of this increasingly important subject have been brought absolutely up to date. In the line of therapy, all of the new methods of treatment are included, protein therapy, diathermy, irradiation for amenorrhea and sterility, etc., and the employment of radium in carcinoma of the cervix according to the ideas of the French School is discussed at considerable length.

The inclusion in the text of collective statistical studies of certain clinical entities is a particularly good departure, for it has long been the reviewer's opinion that this method is the most accurate way, at least from the clinical standpoint, to appraise any given disease and its treatment. Also noteworthy is the fairness of the author's presentation. Naturally the entire subject matter is colored by his own vast clinical experience, but he is careful always, where matters of principle are involved, to quote the opinions and practice of others also.

A very striking feature of this new edition is the detailed consideration of cancer, particularly from the standpoints of etiology and prophylaxis. Whether the author is correct in assigning to

heredity the importance which he apparently is inclined to give to it is still a matter of debate. But certainly there can be no question as to the correctness of his emphasis on chronic irritation as a chief causative factor, and his correlation of such various predisposing causes as lesions of the vulva and vagina, endocervitis, uncorrected childbirth injuries, gynatresia and uterine fibroids with the later occurrence of malignancy, is entirely to be commended.

The arrangement of the subject matter is for the most part quite logical, but the reviewer wonders, as he has wondered in reading former editions, what possible basis there is for the chapter entitled "Special gynecologic diseases." The place of ectopic pregnancy is always a disputed one, but amenorrhea, menorrhagia, sterility, even dysmenorrhea in most of its manifestations are symptoms, not diseases, as the author himself is careful to emphasize, and for that reason it is misleading to deal with them under the above heading. Would not a section entitled "Disorders of function" be more logical? Moreover, "Radium in the treatment of non-malignant gynecologic disease" is a therapeutic consideration, and as such most emphatically does not belong among "Special gynecologic diseases."

On the whole, however, this book is deserving only of the highest praise. It is a complete, impartial, scholarly presentation of one of the most important divisions of medical science, and it cannot fail to add fresh laurels to the already considerable fame of its clinician-author.

C. Jeff Miller, M. D.

A Manual of Otology: By Gorham Bacon, M. D., F. A. C. S., and Truman Lawrence Saunders, M. D., A. B., F. A. C. S. Eighth edition. Philadelphia, Lea & Febiger. 1928. pp. 576.

It has been said that it is easier to write a big text book than a small one, the author of the small text book having carefully to condense material while the writer of the large book is at liberty to expand and reiterate. This book being of 560 pages falls in the class of small text books. It was intended by the author that the book be a compact book of reference for the busy general practitioner and a text book for students. The subject matter is condensed, readable and for the size of the book quite comprehensive. Technique of operations on the nose and throat has been omitted in this edition although the discussion of diseases of the nose and throat in their relation to ear troubles is of course, continued.

H. Kearney, M. D.

Brain and Mind or the Nervous System of Man: By R. J. A. Berry, M. D., F. D. C. S., F. R. S. Edin, New York, Macmillan Company. 1928. pp. 608.

This volume represents the indefatigable and painstaking application of the author. It is a compilation of embryology, anatomy, physiology, biology and neuro-psychiatry. Much of this is given to neuro-anatomy with explanatory data of the brain and spinal cord. To a large extent it is evolutionary in description.

Chapters 29 and 30 deal with problems most instructive. Chapter 35 elaborates on the significance of the nervous system in an explanatory manner which is seldom met with in writings of this type. The chapter on Sleep, Dreams and Emotions is well written and shorn of all pseudo interpretations as to their happenings. The paragraph therein concerning fatigue and sleep is well worth reading.

The remaining chapters with illustrative clinical cases deal with amentia, a matter of vital interest to our civilization and is markedly eugenic in character.

The author is a neuro-psychiatrist of note and has placed within a volume intelligently written the results of his personal activities, investigation and research as only one who has closely contacted the subject matter therein dealt with.

Walter J. Otis, M. D.

Strabismus: Its Etiology and Treatment: By Oscar Wilkinson, A. M., M. D., D. Sc. St. Louis, C. V. Mosby Co. 1927. pp. 240.

Ophthalmology is indebted to the author for an interesting and instructive volume about a subject which needs much intelligently understanding by the oculist, the general physician, and the public. Many popular conceptions on crossed eyes are hopelessly incorrect and would be humorous if they did not result in a deformity which handicaps a human being through life and always represents a souvenir of someone's ignorance.

The reader is given an unusual versatility of opinion, no previous volume having more extensively quoted the literature on this subject. The author's individual ideas and conceptions however are very well expressed and represent the mature judgment of the experienced clinician.

The first section gives an entertaining historical review, showing that many of our current and supposedly new ideas about strabismus are in reality, a hundred or more years old. They have been re-born every few years and most of the deliveries have been dry labors. Thus, the conceptions of correcting squint by glasses, by

operation, and of improving sight in certain cases by exercise, are at least a hundred and fifty years old—that we know of.

The various theories of strabismus with their proponents and opponents are elaborately discussed and cussed. The muscular theory assumes that strabismus is essentially due to a faulty mechanical alignment of one or more parts of the orbital contents, while the accommodative theory regards the equalization of accommodation and convergence as the vital factor. The fusion theory assumes the inability of the central visual motor mechanism to properly direct the eyes together as the essential cause, while the nervous theory maintains that our nervous vitality is the deciding factor in keeping the eyes in their normal direction. In reality, all of these theories are right; and all are wrong. No single cause is alone responsible for all crossed eyes. Three variable factors, individually or together, are involved in all strabismus. They are,—the eyeball, the mechanical alignment of the orbital contents, and the motor visual brain function. If these do not work properly and together, keeping the eyes straight becomes more and more difficult. Finally a point is reached when the proper fixation of both eyes becomes impossible; and, in, or out usually, goes one eye or the other. This usually occurs during excessive fatigue, or its equivalent, lowered bodily vitality.

The anatomy of the orbit and ocular muscles as well as their physiology, is taken up at some length, also the types and measurements of strabismus. These sections are interestingly written but do not contain a great deal that is really new, largely because little worth while has recently been advanced on these subjects.

The examination of the patient with strabismus is then described, a chapter which will especially appeal to those who have not worked out the examination technic best adapted to their individual needs. Each of us is inclined to think that our way of doing things is best—and for us it often is.

About eventy-five per cent of persons with squinting eyes can be practically cured of their deformity without operation if taken in charge early enough by an ophthalmologist who really understand and is interested in this subject—incidentally quite a few are apparently not. The most difficult problem is the constant adaptation of treatment to the patient's individual and current needs. As the author mentions, orthoptic exercises, which are a valuable adjunct to refraction, should not be continued after they have ceased to be of practical benefit. Only one case in about ten obtains permanent benefit from ocular exercises because the doctor, the patient and the parent will not continue their use in a regular, systematic and intelligent way.

All of the accepted methods of operative treatment are decribed in detail, in fact it is possible that the author has discussed too many rather than too few operations. It is so easy for the younger ophthalmologist to get lost in a mass of different operations and make a mistake in the practical solution of the individual problem before him. Dr. Wilkinson has perfected the operation of resection and has invented several ingenious instruments which make it the simplest and most accurate of the strengthening types of operation.

The volume closes with photographs and descriptions of illustrated cases and a carefully illustrated index.

The author in this very practical volume insists justly and often that many of the failures in the non-operative treatment of strabismus are due to negligence on the part of the parents or the oculist. He also urges the use of orthoptic exercises after operation, an important point which is not usually seen in print. His statement that tenotomy should never be done on children under twelve years of age seems rather dogmatic, notwithstanding that this operation has been greatly abused in by-gone years. Anyone who is really interested in this subject will do well to read Dr. Wilkinson's book; and then read it again.

Charles A. Bahn, M. D.

The Diagnosis and Treatment of Diseases of the Stomach: By Martin E. Rehfuss, M. D. Philadelphia, W. B. Saunders Company. 1927. pp. 1219.

This is a very excellent volume, for several reasons:

The subject matter is interesting and attractively presented.

A special chapter is devoted to "The study of food digestion in the stomach." This chapter covers the action of a large number of foodstuffs in the stomach, particularly with relation to their effect in stimulating gastric secretion and also the time required for their evacuation from the stomach. It is but a short step to apply the knowledge, so gained, to disease processes and this Dr. Rehfuss does when discussing various gastric conditions.

Many chapters are devoted to the relationship existing between the stomach and other organs, particularly the duodenum, gall-bladder, pancreas, colon and appendix. This, in the opinion of the reviewer, is a very excellent plan as gastric func-

tions are so intimately associated with the other viscera, particularly those supplied by the vago-sympathetic nervous system.

While about everything which can have a bearing upon gastric function has been discussed in this work, the reviewer feels that a short chapter devoted to a discussion of that common ailment "Indigestion" and its common causes, would have fitted in nicely.

This volume is most heartily recommended for its completeness and the excellent presentation of the subject matter.

J. Holmes Smith, Jr.

Nurses, Patients and Pocketbooks: Report of a Study of the Economics of Nursing Conducted by the Committee on the Grading of Nursery Schools: By May Ayres Burgess, Director. New York, N. Y. 1928. pp. 618.

Nurses, Patients, and Pocketbooks is a report on more than a year's nation-wide study of the supply and demand in nursing service conducted by the Grading Committee of Nursing Schools.

The Grading Committee, having been created by seven national organizations, felt that they could not set any standard of education until they thoroughly understood conditions. Thus a system of questionaires sent to physicians, nurses, patients, public health supervisors, institutional supervisors and registrars have been used in compiling statistics on the economic situation. Miss Burgess has endeavored to present these facts not only in the form of percentages and diagrams but by the actual words used by many individuals.

The outstanding fact presented is that nursing training schools are the only schools conducted on a truly economic basis. They exist because the hospital needs skillful, docile labor at the lowest possible cost. There are a few exceptions in the University Training Schools, but these are rare. As the nursing service in most hospitals is inadequate the patient must, if he needs special attention, employ a private nurse. No effort is made to give the public the benefit of the trained worker. Even when professionals are employed on floor duty, they often supplement the student rather than taking charge of her training. Again no special preparation is made for the branch of service a nurse expects to do after graduation, and because many hospitals need students they admit girls who although they may do fairly well under strict supervision are not desirable after graduation. Fifty-four per cent of the graduate nurses do private duty, 23 per cent institutional work, 19 per cent Public Health, and 4 per cent other branches.

That there is no shortage of nurses is shown by the fact that many parts of the country report serious conditions of unemployment. There are more than two nurses to every doctor now, and it was shown (by a series of computations) that unless something is done, in another thirty years there will be ten to one. Will the public use this many nurses?

Of the different branches of services, the private duty nurses were the most discontented. There is evidence to show that they are the poorest paid, have the longest hours, have less recreation, have less social life, have more sickness, and receive the least sympathy and understanding.

Some patients and many doctors complained of the expense the nurse carried. About one out of every three, reported on by physicians, found it harder to pay the nurse than to get a good one. Many patients expressed their interests in hourly or group nursing which would be less expensive for the patient, and necessitate shorter hours for the nurse than under the present system.

Patients were more critical of nurses than physicians, but it was shown that the majority of physicians and patients prefer trained nurses; and by far the largest per cent say they would employ the same nurse again. Some serious criticisms were made, most of which were that the nurses lack the proper background of training and education; some nurses were very thoughtless of the family and existing conditions. Statistics show that half of the graduate nurses have had four years of high school, and that 15 per cent have had one year or more of college. The remaining 35 per cent have had less than four years of high school.

The majority of physicians lay stress on skill in general nursing care and making the patient comfortable, first; then skill in observing and reporting symptoms; care and following medical orders; and last, but not least, good breeding and attractive personality.

What the majority of nurses want are: Reasonable hours, adequate income, conservative leadership and opportunity for growth.

No efforts were made to solve the difficulties which presented themselves, as the Grading Committee considers themselves a judicive rather than a legislative body.

My own reaction to the book was general depression, but as Miss Burgess brings out, nurses love nursing. Those that leave the profession often come back, and those that do not come back often speak of it as of the happiest periods of their lives. Although constructive criticism is good, I truly believe that no profession, national

organization, committee, or people could stand the inspection of a critical person without presenting some startling facts. I have been associated with college girls and student nurses. They are not strikingly different. Nurses are under stricter discipline and show more reaction when they are free. Less attention is paid to their recreation, and they probably need more than any other class of people. I know quite a few teachers intimately and I find that they are often mechanical and without definite vision. There will always be a few men in the medical profession who do not realize the influence of their actions. Yet! No better substitute has been found for the present-day college, and no one would abolish the teaching profession, or loose faith in one of the highest profession, a man can choose, because a few human beings fall short of the ideal. Neither does the nursing profession need an excuse for its existence.

Olive E. Wakefield.

Studies in the Psychology of Sex: By Havelock Ellis. Vol. 7. Philadelphia, F. A. Davis Co. 1928. pp. 539.

This supplemental volume to a colossal work is a fitting close to a study that is destined to endure for centuries. The more one reads the author, the more one is impressed with the great learning of the scholar. His profound knowledge of the subject, his skill in handling his material, his extensive reading are all imprinted on this volume as in the others and are most essential information to one interested in this study.

I. L. Robbins, M. D.

Clinical Aspects of the Electrocardiogram: By Harold E. B. Pardee, M. D. New York, Paul B. Hoeber, Inc. 1928. pp. 242.

This is a second revised edition of a book that has definitely established itself as a standard text. For the general practitioner it is an excellent reference. The information presented is brief, clear and concise. Few important changes were made in this volume, but the advances made in electrocardiography and the several new machines in use and the newer terminology employed are given adequate attention.

I. L. Robbins, M. D.

Mental Health of the Child: By Douglas Armour Thom, M. D. Cambridge, Harvard University Press. 1928. pp. 46.

An essay of sufficient merit to warrant publishing in one of the important series of Harvard health talks.

J. H. Musser, M. D.

Anthelmintics and Their Uses: By R. N. Chopra and Asa C. Chandler. Baltimore, The Williams & Wilkins Company. 1928. pp. 291.

This is a comprehensive work on helminthology. It not only describes minutely the parasites, but analyzes the specific drugs, giving dosage, manner and administration, toxicology and contraindications. It is complete, in that it describes parasitic infestations of animals and the treatment, as well as of man. It is, therefore, valuable to the veterinarian and to the physician alike. It fills a long felt need for a detailed account of anthelmintics and their uses.

H. W. Butler, M. D.

Mosquito Surveys: By Malcolm E. MacGregor. New York, William Wood & Co. 1928. pp. 293.

This book has been prepared for the use of the field workers engaged in combatting malaria and mosquitoes. It deals first with the anatomy of the mosquito in general, and then discusses in detail the differentiation of the more important mosquitoes capable of bearing disease. There is a last section on laboratory and field technique, which recounts methods of mounting mosquitoes, a section on anatomical technique, and on the breeding and the rearing of mosquitoes, as well as methods of rearing them in captivity. Some ten pages are devoted to field technique. The book can be heartily recommended for those engaged in mosquito campaigns.

J. H. Musser, M. D.

PUBLICATIONS RECEIVED.

Paul B. Hoeber, New York: Réné Theophile Hyacinthe Laennec, a memoir, by Gerald B. Webb, M. D.

D. Appleton and Company, New York and London: The Nose, Throat and Ear, by John Barnhill, M. D., F. A. C. S. The Eye, by C. W. Rutherford, M. D., F. A. C. S.

J. B. Lippincott Company, Philadelphia and London: International Clinics, Volume II, June, 1928. The Heart in Modern Practice, by William Duncan Reid, A. B., M. D.

Longman's, Green and Co., Ltd., London and New York: Fever, Heat Regulation, Climate and the Thyroid Adrenal Apparatus, by W. Cramer, Ph. D., D. Sc., M. R. C. S.

Agricultural Research Institute, Pusa: Memoirs of the Department of Agriculture in India, by Major R. F. Stirling; Memoirs of the Department of Agriculture in India, by J. T. Edwards, D. Sc.

Calcium Therapy, by John Aulde, M. D., Philadelphia.